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THE FRUIT MAGAZINE

PUBLISHED MONTHLY, IN THE INTERESTS OF FRUIT GROWERS,
FRUIT DEALERS AND FRUIT CONSUMERS

Volume II

OCTOBER, 1910 - MARCH, 1911 Number 1-6



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THE FRUIT MAGAZINE

VOLUME II.—OCTOBER, 1910—MARCH, 1911

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FRUIT MAGAZINE

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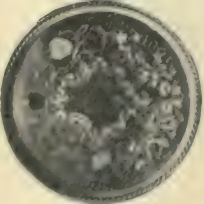
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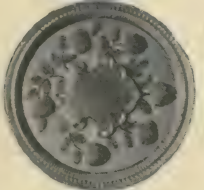
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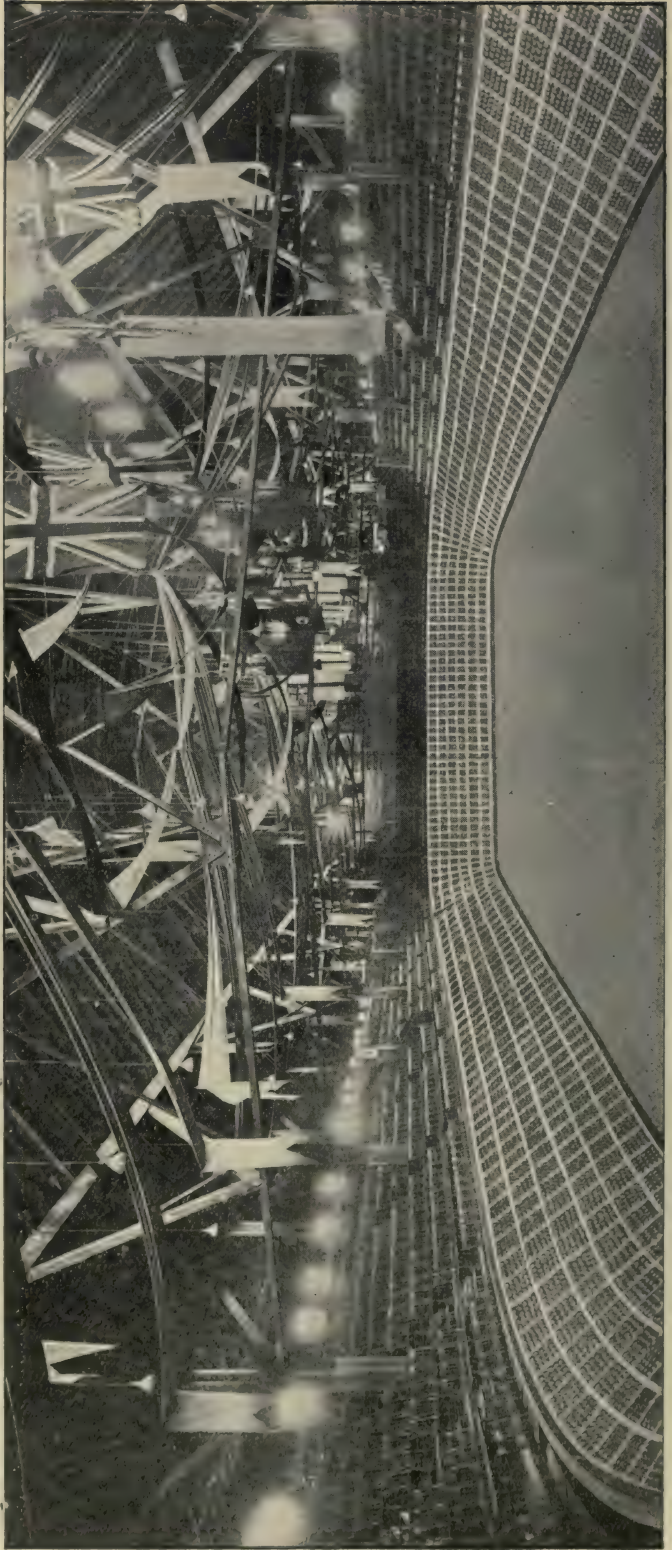
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Arena Vancouver Horse Show Building as it will appear during First Canadian National Apple Show

The Fruit Magazine

VOL. II

OCTOBER, 1910

No. 1

The Economy of the Prevention of Conveyance Losses of Irrigation Water

And the Use of Concrete for the Economical Construction of Irrigation Structures

By PROFESSOR ETCHEVERRY, of the University of California

Read before the Fourth Annual Convention of the Western Canada Irrigation Association
Kamloops, B.C., August 3, 4, 5, 1910

IT was with great pleasure that I accepted the invitation to come from California to present a paper to this body. Not only does it give me an opportunity to give you some information which I hope will be of value to you in solving your irrigation problems, but it permits me to become better acquainted with you and your rapidly developing country, which has become the home of many of the best citizens of the United States.

While this is only my second trip to British Columbia, I have during the past year taken two other trips in the arid region of the Northwest of the United States. My first visit to British Columbia was a short one last May, when I had occasion to examine the fruit lands project across the river from Kamloops. From this examination, as well as from the general view I had of this part of the province, I was impressed of the similarity of your country with some portions of Eastern Washington, and so I do not feel a stranger to your irrigation conditions.

I have selected for discussion topics which I believe are of general interest to those engaged in irrigation work. In the first part of my paper I shall discuss "Seepage and evaporation losses in the conveyance of water, and their prevention."

All irrigators are well acquainted with the fact that the losses in conveying water in earth canals are in many cases very large, and with newly-excavated canals are often so great that it is difficult to deliver any water at the lower end. The water lost by seepage disappears through some underground channel below, or raises the water table of the lands adjacent to and below the canal. This causes either the waterlogging of the land or the accumulation of alkali salts on the surface. This effect, combined with wasteful irrigation, has been the cause of over 10 per cent. of the irrigated lands of the West becoming unfit for crop production. These damages alone, in many cases, justify the expense of lining the canals. This was forcibly brought to my attention on a private project which I visited in the Yakima Valley in Eastern Washington. Although it had been in operation only one season, a large percentage of the land had become waterlogged. To remedy this several miles of concrete lining and the improvement of drainage were recommended. The lining has recently been constructed and will no doubt prevent the waterlogging to a large extent.

But even if these damages to the land are neglected, there are many localities where water is sufficiently valuable to

make the lining of canals to prevent the loss of water a paying business. The amount of money which one is justified in spending will be in proportion to the extent of the losses, which depends on local conditions, such as porosity of the soil, the size of the canal, the number of seasons the canal has been operated, the amount of silt in the water, the velocity of flow, the form of cross section, the depth of water table, etc.

The most valuable general observations as regards the amount of these losses are those of the Irrigation Investigations Bureau of the U. S. Department of Agriculture. From series of measurements on 73 ditches in the Western States, they have found that the average loss per mile of ditch is 5.77 per cent. of the entire flow; the measurements range from a maximum of 64 per cent. per mile to a slight gain in a few cases. Large canals in general lose less in proportion than small ones. The measurements show that the loss per mile averages about 1 per cent. for canals carrying 100 cubic feet per second or more; about $2\frac{1}{2}$ per cent. for canals carrying 50 to 100 cubic feet per second; $4\frac{1}{4}$ per cent. for canals carrying 25 to 50 cubic feet per second; and $11\frac{1}{4}$ per cent. for canals carrying less than 25 cubic feet per second.

These losses include seepage and evaporation, but, contrary to the general belief, the losses of evaporation are insignificant compared with those of seepage. An unusually large rate of evaporation is half an inch a day, and is only reached occasionally. In the San Joaquin Valley, in California, the mean evaporation measured for the hottest month was .37 of an inch in 24 hours. Seepage losses are usually greater than 1 foot in depth per 24 hours, and usually average not less than 2 feet. These losses are 25 to 50 times the maximum evaporation of half an inch per day. A good illustration is obtained from measurements and computations made on one of the largest systems in the San Joaquin Valley. The total length of canals is 165 miles; the average evaporation loss was .9 of 1 per cent.

of the flow diverted; while the total seepage losses were 28 per cent., or 30 times greater than the evaporation losses. These and other numerous experiments show the evaporation losses in the conveyance of water to be so small as compared with the seepage losses that they are of no importance.

To prevent the losses of water in conveyance, lining the canals with different kinds of materials has been tried. The materials used or experimented with are concrete, wood, asphalt oils, and clay puddle.

A good lining should fulfil the following requirements: It should be watertight, prevent the growth of weeds, stop burrowing animals, be strong and durable, and not affected by frost or the tramping of cattle. A few years ago I had the opportunity to investigate for the Government the different types of canal linings in California, and to make experiments to determine their watertightness. From these and from more recent experiments I believe the following results can be anticipated:

First, a good oil lining, constructed with heavy asphalt road oil, applied on the ditch sides and bed at the rate of about 3 gallons per square yard, will stop 50 to 60 per cent. of the seepage. A well-constructed clay puddle lining is as efficient as a good oil lining. A thin cement mortar lining about 1 inch thick, made of 1 part cement and 4 of sand, will prevent about 75 per cent. of the seepage. A first-class concrete lining 3 inches thick, made of 1 part of cement to 2 of sand and 4 of gravel will stop 95 per cent. of the seepage. A wooden lining when new is as efficient as a concrete lining, but after two or three years repairs and maintenance will become an important item, and by the end of 8 or 10 years it will require complete renewal.

The cost of an oil lining where oil can be bought at California prices is about 1.2 cents per square foot. Cement mortar lining 1 inch thick costs about 3 to 4 cents a square foot. Cement concrete 2 inches thick costs about 6 cents, and 3 inches thick about 8 cents a square foot.

The cost of clay lining depends greatly on the nearness of the canal to suitable clay. If clay is close at hand it can be hauled and spread on the canal, then either tramped in by cattle or worked in by dragging chains over it, at a cost of less than 1 cent a square foot; but there are many localities where I have seen enough money spent on clay linings to put in a good concrete lining. Wooden lining has been used in a very few cases, and the cost of such a lining built of 2-inch lumber nailed on sills and side yokes will not be less than that of a 2-inch concrete lining, and not nearly as durable.

The disadvantages of the cheaper linings are the following: An oil lining stops only a fraction of the seepage losses, and while it will resist erosion well, it probably will not prevent the growth of weeds for more than one season unless a high velocity is used, and it will not stop the burrowing of gophers. Another objection is that suitable oil is often hard to obtain at a reasonable price. Oil linings have not been sufficiently tested to determine their durability. To my knowledge the only examples are two canals and one reservoir in the San Joaquin Valley of California and two reservoirs in Los Angeles. Clay puddle will not prevent the burrowing of gophers, and weeds grow rapidly, especially since the velocity of flow must be small in order not to erode the lining.

A concrete lining has none of the above disadvantages, and it meets the requirements of a good lining better than any other material. The only objection is its higher first cost. This, however, can be partly balanced where a new canal is to be constructed by using a higher velocity and smaller cross-section.

The earliest use of concrete linings was in Southern California about 1880, when the increasing value of water made it necessary to do away with losses. Since that time practically all of their canals, which are comparatively small, carrying usually less than 100 cubic feet per second, have been lined

with concrete, and in some cases replaced by concrete pipes. Until recently very little concrete lining has been done outside of that region; but during the last few years concrete-lined canals have been constructed on many of the projects of the U. S. Reclamation Service and on numerous private projects. As examples: The Modesto System in California has lined portions of its main canal, 64 feet wide at the top and $5\frac{1}{2}$ feet deep, with concrete lining $2\frac{1}{2}$ inches thick. The Lower Yakima Irrigation Company of Eastern Washington has completed seven miles of concrete lining. The Burbank Power and Irrigation Company, also of Eastern Washington, has recently constructed one mile of concrete lining. There are also numerous examples in California, Oregon, Nevada, Idaho and other States.

While there are many ways of building the concrete linings, they are generally constructed according to two methods. The first method is used where the side slopes of the ditch are flatter than 1 to 1; the second method is used for steeper side slopes.

To construct linings according to the first method the canal is trimmed ready to receive the lining; then the mortar or concrete is spread on the sides and bottom and plastered on in a manner similar to sidewalk work. To obtain the right thickness guide strips are used. The thickness ranges from three-quarters of an inch up to 3 or 4 inches.

To construct the lining according to the second method, the canal is first trimmed, then the wooden form for the side lining is placed in position and the concrete mixture poured or thrown in the space between the form and the sides of the earth ditch. For canals less than 10 feet at the top, usually the form is a wooden trough made of the same cross section as the finished concrete-lined ditch. The thickness of lining is usually from 2 to 6 inches.

The very thin linings of 1 inch or less have been used extensively on many systems of Southern California, and have been very satisfactory. As an instance the Gage Canal has been lined with

three-quarters of an inch of cement mortar for almost its entire length of 20 miles. After 10 years of use, during the last four years of which water was run continuously, giving no opportunity for repairs, the total cost to repair thoroughly all sections was for these four years less than half of 1 per cent. There is no doubt in my mind that such thin linings, while helpful, are not strong enough to be satisfactory, especially where the extremes in temperature are as great as in the Northwest. There is only one example, to my knowledge, of a thin lining built in a region where the ground freezes. That one is in Eastern Washington, where four miles of canal were lined with a lining varying from $\frac{1}{2}$ to $1\frac{1}{2}$ inch thick. When I examined the lining I found it rather badly cracked; but, because of poor workmanship, it was impossible to state how much of the cracking was due to frost. Although this lining was not, in my opinion, very satisfactory, it was nevertheless helpful in preventing seepage losses, for before its construction it was impossible to carry water over this stretch without losing most of it.

As a guide for the proper thickness for concrete linings in the Northwest, I would recommend usually not less than 2 inches for small canals, and preferably 3 inches. There are many localities where 3-inch concrete linings have been used with entire success, even where subject to frost. No matter what the thickness is, unless the concrete is reinforced with steel, or expansion joints provided, cracks are to be expected. These will usually be fine cracks occurring at more or less regular intervals, and the leakage through them will be small, the cracks often silting up. For better appearance and also to distribute the cracks at uniform intervals, the lining should be laid in sections 6 to 8 feet long.

To decide intelligently what canals should be lined with concrete, and to know what expenditure is justifiable, it is necessary to know the extent of the seepage losses and the value of the water which is lost, also the damage done by seepage water. If the value of the

water only is considered, then one is justified in expending, for the improvements of the canals by lining, a capital whose interest, added to the depreciation, is equal to the annual value of the water loss. Accompanying benefits are the prevention of land waterlogging, the minimum danger of breaks and the prevention of damages to crops, because of interruption in flow. As an instance, if a canal carrying 100 cubic feet per second loses 1 per cent. per mile by seepage, the water lost in one irrigation season of five months is 300 acre feet per mile of canal. This water represents a value of \$450, on a basis of \$1.50 an acre foot. To save this water we would be justified in spending a sum whose interest, added to the depreciation, is equal to the above sum. As depreciation on a good concrete lining and interest would not exceed 7 per cent., the value of the water lost would represent an investment of \$6,400 per mile. Since a 3-inch concrete lining could be constructed for \$6,000 per mile, the above sum is more than sufficient.

The assumed seepage loss of 1 per cent. is often exceeded with small canals, and on most irrigation systems there are always some sections of canals which would warrant concrete lining. With the increasing price of water, and with the development of water by storage and pumping, which is most always expensive, I believe the time will soon come when many of our irrigation canals will be concrete-lined.

Concrete pipes for the conveyance of water, where the quantity of water is not large, have some advantages over canals. They do away with the road crossings which are necessary with canals; they do not occupy any land which is wasted; and they do not collect the dirt and rubbish that fall in open canals. They can also be used under light pressures, and take the place of canals all in fill or flumes on low trestles. The argument that they also prevent evaporation has not much weight, for we have seen that the losses due to evaporation are negligible. These advantages have led to the use of con-

crete pipes up to sizes of 3 or 4 feet in preference to concrete-lined canals. This is the case with many of the canals and laterals of many of the irrigation companies of Southern California. For large quantities of water the cost of concrete pipes is prohibitive.

Concrete pipes are especially valuable for the conveyance of small quantities of water over rough lands, but the largest use of them is for the smaller laterals of the irrigators. In Southern California hundreds of miles of cement pipe have been used for the distribution systems to prevent the losses in conveyance, to facilitate the distribution of water, and to prevent waste in its application to the land.

The measurements of the United States Irrigation Investigations Bureau show that the losses in conveyance are much greater for small ditches than for large canals. For this reason the largest losses are often in the ditches of the irrigator after he takes the water from the canals of the company. Other important losses are in the spreading of the water on the land.

I shall not discuss the different methods of application to the land, but will confine myself to furrow irrigation and show the economy of the use of concrete pipe distribution systems over older methods. I do not intend to infer that it is the only method of irrigation to which pipe systems are adapted, for where water has to be handled in small heads, as in Southern California, it is equally well adapted to alfalfa and other crops.

Where furrow irrigation is practised the crude method, which has been largely abandoned in Southern California, is effected by means of an earthen ditch located along the higher boundary of the farm, which carries the water to the upper end of the furrows, where an equal division between furrows is attempted through openings in one bank of the ditch, or through iron or wooden spouts. This method requires constant attention, and a uniform distribution is impossible. For this reason in many localities the earthen head ditch has been replaced

by wooden flumes with one opening in the side of the flume for each furrow; the openings are regulated by slides or plugs. In Southern California the short life of wooden distributing flumes and their leakage have led to the use of concrete flumes. These flumes are constructed by means of a specially-designed machine, or by means of wooden or metal moulds. In the side of the flume are cemented galvanized iron spouts, one for each furrow, and the flow is regulated by iron slides. These small flumes cost about twice as much as a wooden flume, but their durability will more than offset the greater first cost.

The distribution of water in flumes over rolling ground requires that wooden flumes be used, supported on stilts or trestles. These, as often constructed, are weak, and will often blow down with every strong windstorm. Flumes also interfere with cultivation and harvesting of the crop. These objections have led many of the irrigators of Southern California to use underground pipe distribution systems—a supply pipe laid about 2 feet underground along the upper boundary of the tract. At the head of each row of trees the pipe is tapped and a stand-pipe connected to it. The water flows out of the stand-pipe into the furrows through spouts cemented in the stand-pipe. Cement, wood and clay pipes are generally used. Cement pipe is more durable than wood pipe, and is considerably cheaper than either, except where a clay pipe factory is in the vicinity and it has to meet competition. The cement pipe used in Southern California ranges from 6 inches to 36 inches in diameter, and is made of a mixture of 1 part of cement to 3 or 4 of sand or gravel, well tamped in metal moulds. The moulds are not expensive, and the pipes are often made by the irrigator himself. As the large pipes will not resist pressures above 10 feet and the small ones not over 20 feet, for greater pressures wooden pipes or some other type of concrete pipes are necessary. The cost of this type of cement mortar pipe

as compared with wooden banded pipe is about as follows:

Diameter.	Wood banded pipe of Vancouver.	Cement mortar pipe. 1 : 3 mix- ture. Built on ground but not laid.
12ft. ..	.385 ..	.20
14ft. ..	.44 ..	.25
16ft. ..	.55 ..	.30
20ft. ..	.91 ..	.43
24ft. ..	1.21 ..	.60

In general the cement pipe costs about one-half the wood banded pipe.

While pipe irrigation has until recently been limited to Southern California, it has, to my knowledge, during the last few years been adopted for orchards in Oregon, Washington, Idaho and no doubt other States, and there are many localities where expensive wooden pipe and iron pipe systems have been installed where a cheaper and more permanent cement pipe system could have been built.

In the above remarks I have attempted to present to you what I believe is the best solution for the prevention of water losses in the conveyance of water. The methods suggested may be expensive in first cost, and no doubt there are localities where water is so plentiful and cheap that no improvements are necessary; but the remarkable growth of irrigation of the last few years has created such a demand on the water supply that the cheap sources have been mostly utilized. In future water will be developed at a greater cost, and because of the large area of arid land for which there is insufficient available water supply, the high value and scarcity of water will lead to the best form of conveyance of water.

For the second part of my paper I have selected "Concrete and its relative economy as compared with wood for irrigation structures, meaning by concrete both plain and reinforced concrete."

While concrete and masonry have been the standard materials for irrigation structures in the older irrigated regions of foreign countries, the use of concrete on the irrigation systems of the United

States was practically unknown until a few years ago, with the exception of Southern California, where concrete has been used during the last twenty years or more for lining canals, for cement pipes, for concrete distributing flumes, and for measuring boxes and other smaller structures. During the last few years, and especially since the beginning of the work of the U. S. Reclamation Service in 1902, concrete structures are widely used, not only on the twenty-five Government projects located in fifteen States and territories, but on many of the new private projects. On some of the older systems wooden structures which have decayed are often replaced by permanent concrete structures. For instance, the Modesto and Turlock irrigation systems in California are replacing many of the wooden structures with concrete as fast as they need renewal. This is also true of the Arkansas Valley Sugar Beet and Irrigated Land Company of Colorado, which has done some very interesting reinforced concrete work, and of many other projects in the other States.

The obstacles which have in the past prevented the more rapid extension of cement have been its cost and the difficulties of handling it, as compared with the lower first cost of wooden structures, which are easily erected by common laborers. The difficulties in the manipulation of cement are not serious. Now that concrete is so widely used in cities and on farms, any observant, careful person can, with a little reading and some practice, learn how to construct the simple structures. As regards its cost in comparison with lumber, the cost of cement has very materially decreased, and it can be purchased for from \$2.50 to \$3.00 in most regions, while the price of lumber has advanced. Another reason for the increasing use of concrete for irrigation work is the rapid development and improvements in reinforced concrete construction, which is well adapted for irrigation structures.

The one great advantage of concrete

over lumber is its great durability. It is true that, as a rule, the first cost of concrete structures is more than that of wooden ones, but almost invariably concrete is more economical. The difference in first cost is not as great as is usually supposed. A few general comparative figures, based on facts collected from different projects, will help to convince those who are still strong advocates of wooden structures.

Omitting the parts of irrigation systems already discussed, the structures most frequently used are gates or turnouts, or division boxes placed at the heads of ditches; measuring boxes, drops or falls used where the slope of the ground is steeper than the grade that can be given to the canal; pipe syphons and flumes to cross depressions and for side hill work; bridges, and culverts.

As regards durability, the wooden structures can be classified into two groups. In the first group are those structures which are partly in the ground, which include gates at the head of ditches, division and measuring boxes, drops, culverts, etc.; and in the second group are those which are all above ground, such as flumes and wooden stave pipes when supported above ground or buried underground. The life of wooden structures depends on the quality of lumber used, on the strength of the structure and the workmanship. For instance, a flume well built and with sufficient strength to prevent springing and settling, so that there will be minimum leakage, will last much longer than a weaker flume.

The short life of wooden irrigation structures is greatly due to the lumber being alternately dry and wet. The life of the structures of the first group is in addition shortened by the wood being partly in contact with moist earth.

The cost of repairs of these structures after they have been constructed three or four years becomes quite an item, and at the end of six to eight years for pine, and eight to ten years for redwood, complete replacing is necessary. The annual cost of repairs and maintenance aver-

ages usually about 5 per cent. for the first three years and 15 per cent. for the next four or five years, averaging about 10 to 12 per cent. for the entire life of not over 10 years. In addition to this should be added the cost of renewal, which if distributed over ten years will amount to 10 per cent. per year. The life of well-constructed redwood flumes and of wooden stave pipe is greater and may be as long as 20 years, but is usually 12 to 16 years, with practically no repairs the first five to eight years, but with considerable repairs afterwards, averaging not less than 8 per cent. yearly for the entire life. The cost of renewal distributed over the 16 years amounts to 6 per cent. per year. If we assume the interest on the capital invested to be 6 per cent., then the total annual cost for the structures of the first group is not less than 26 per cent. of the first cost, and for the second group 20 per cent.

Concrete structures, if properly constructed, will last for ever; but assuming depreciation and repairs at 2 per cent. gives a total annual cost of 8 per cent. as compared with 26 per cent. for wooden structures of the first group, and 20 per cent. for wooden structures of the second group. Based on these figures concrete structures are more economical if their first cost is less than $3\frac{1}{4}$ times the cost of wooden structures of the first group, and $2\frac{1}{2}$ times the cost of wooden structures of the second group. However, the actual cost of many concrete structures is much less than would be given by such ratios, and is often only a little higher than wooden structures. This is especially true of concrete structures built partly in the ground, for they require only simple forms, and when these forms can be used over many times, as where several structures of the same size are required, the cost is greatly reduced. For illustration, on the Orland project, in California, the average cost of several small drops was \$32.82; the estimated cost for a wooden structure of the same size is \$27.94, or 15 per cent. less. The average cost of 60 concrete turnouts was \$25.50, as compared with

\$19.80, the estimated cost of wooden turnouts, which was 20 per cent. less. On the University Farm at Davis, California, a concrete check gate cost about 50 per cent. more than wooden ones. The Arkansas Valley Sugar Beet and Irrigated Land Company of Colorado have during the last few years constructed some very interesting reinforced concrete structures. The cost of two large reinforced concrete drops was \$131 per foot of fall, and the corresponding cost of a series of substantial wooden drops was \$120 per foot of fall. The wooden structures were built in 1899, but in 1904 were in such poor condition that the operation of the canal at full supply caused some uneasiness for fear of breaks, and they required complete renewal two years afterwards, making their life about seven years.

In a general way it can be stated that, as a rough approximation, wooden structures built in contact with the ground, such as gates, drops, etc., will cost in place, including excavation and backfilling, from \$40 to \$50 a thousand. Small reinforced concrete structures of the simplest type will cost \$10 to \$12 a cubic yard, ordinary reinforced concrete structures \$12 to \$16, and elaborate structures with thin reinforced walls \$15 to \$20. Usually a structure requiring 1,000ft. of lumber can be built with about 4 to 5 cubic yards of concrete, and the concrete structure will cost from 25 to 50 per cent. more.

With the structures of the second group, that is, wooden flumes and wooden stave pipes, the comparison is not quite so favorable to concrete as with the other structures. This is because of their longer life as compared with the wooden structures in contact with earth, and to the greater difficulty in constructing them of concrete. The cost per cubic yard of concrete is considerably greater, especially for flumes crossing canyons and deep depressions, because this requires expensive forms to support it during construction and some skilled labor. For that reason the cost of concrete flumes may be as great as three times the

cost of a wooden flume, in which case a wooden flume or a steel flume may be more economical, at least until the price of lumber increases. But there are conditions which will favor the use of concrete, for instance, the Modesto and Turlock systems of California have replaced all their old bench flumes, which aggregate several miles, running on the side hills, by concrete channels formed by means of a wall on the down-hill side, a slope lining on the uphill side and a concrete floor in between. This not only did away with the high cost of repairs and renewals, but has paid for itself in the additional security, because a break in their main canal has meant the interruption of delivery of water, and has caused great damage to crops. As a rule, a concrete flume supported on columns should not cost over 2 to $2\frac{1}{2}$ times the cost of a wooden flume.

As regards reinforced concrete pipes compared with wooden stave pipes, several of them have been built by the Reclamation Service, and a few on private projects, and their first cost is generally $1\frac{1}{2}$ times the cost of wooden stave pipes. They are therefore more economical, and should be used in preference. They are, however, limited to moderate heads. The maximum head to which they have been submitted successfully is about 100 feet. A large reinforced concrete syphon in Spain, 13 feet in diameter and 7 inches thick, is under a head of 97 feet. On the Umatilla project in Oregon reinforced concrete pipes 4 feet in diameter, 3 inches thick, have been tested successfully for pressures equivalent to 100 feet heads. For even these moderate heads careful work is necessary.

To summarize the above remarks it may be stated that, in a general way, with the exception of some flumes, concrete structures will cost from $1\frac{1}{4}$ to $1\frac{1}{2}$ times the cost of wooden ones. Since the large annual cost for repairs and renewals of wooden structures makes it economical to spend for concrete structures $2\frac{1}{2}$ to $3\frac{1}{4}$ times the price paid for wooden structures, in nearly every case a concrete structure is

more economical, and will cut the total annual cost of repairs, renewals and interest into one-half.

Another advantage of concrete structures which I have not emphasized is the additional security obtained, which is worth considering.

During the last two years some doubt has been cast upon the durability of concrete, because of its disintegration by the effects of alkali. So far all that has been published can be reduced to the following facts:

1st. Out of all the many concrete irrigation structures, including those on the 25 projects of the U. S. Reclamation Service, constructed in 13 States and territories, there are only two projects, one in Montana and one in Wyoming, where the failures of concrete structures have occurred. The only other recorded instances are some sewers in Montana and some concrete drainstiles in Colorado.

2nd. The disintegration seems to take place where the structures are in contact with strong alkali water of a peculiar composition, and occurs where the water permeates the concrete mass and is evaporated, leaving the salts in the pores of the concrete.

3rd. Black alkali seems to have no harmful effect, and the disintegration is caused probably by only some of the white alkali salts. Wherever disintegration has occurred the alkali salts are sulphates, with magnesium sulphate predominant.

As against these few failures there are hundreds of examples of concrete irrigation structures where alkali has had no effect. Nevertheless, where the sulphates are strong it is good policy to experiment on a small scale in those localities before works involving large amounts of money are built, and to take all known precautions in the construction. At present the best known means to prevent disintegration are:

1st. To make the concrete as nearly impervious as possible.

2nd. To remove the alkali water where practicable by drainage.

3rd. To use some cement which will be most resistant to alkali.

The Reclamation Service is now experimenting with the use of a special cement, and the Geological Survey is carrying on a series of experiments which it is hoped will help to solve the problem.

First Canadian National Apple Show

By L. G. MONROE

THE world is going to be influenced largely in its opinion of the horticultural resources and possibilities of Canada, and more particularly of the Province of British Columbia and of the Pacific North-west, by what is to be seen at the First Canadian National Apple Show, to be held at Vancouver October 31st to November 5th inclusive; and the world's judgment is not going to be a disappointment for the exhibition promoters, because any and all districts which are growing apples will be repre-

sented at the forthcoming big show. This great apple exhibition will be housed in the Vancouver Horse Show Association building, near the north entrance to Stanley Park, and a large temporary structure covering all of Alberni street for the distance of a block. The buildings will have a grand total of 98,640 square feet of floor space.

The public will have easy access to the buildings, which can be reached by the Pender, Robson and Davie street car lines.

The big arena of the Horse Show building will be used to display the district, limited two-box, two-barrel, two-basket, two-jar, and two-plate contest and box exhibits. The show ring is 75 x 199 feet, containing about 15,000 square feet. The exhibits will be arranged around the ring upon an incline of 45 degrees, having a perpendicular of about 12 feet and 12 feet of base. This arrangement will give a continuous display 12 feet wide, 12 feet high and approximately 450 feet long, and will have the appearance of a veritable cascade of apples, having a fall of 17 feet without beginning and without end, which with the beautiful colorings of the king of fruits will present a scene never before equalled in the history of the world.

Completely surrounding the show ring are the spectators' galleries, having a total seating capacity of 3,000. A splendid and remarkable feature will be that every portion of the exhibit can be seen from any seat in the galleries.

Within the charming circle of the apple hosts will be stationed, upon a raised platform, the 48th Highlanders' Military Band of 40 pieces, the most famous band of Canada, and one of the leading bands of the world. This great musical organization has been secured by the management exclusively for the First Canadian National Apple Show at an initial expense of \$5,000. The band will come direct from Toronto, Ont., to Vancouver, without playing concert engagements at any intermediate point. The appearance of the band in full-dress Highland costume is certainly the most attractive military band spectacle in the world. It stands today pre-eminently Canada's favorite band, unequalled by any other military band in its special line of entertainment, and, under the brilliant leadership of Bandmaster John Slatter, will always maintain its reputation and live up to and fully sustain its standing—"second to none."

Bandmaster Slatter graduated from one of the most celebrated bands of the British Army (1st Life Guards), of which he was one of the principal

soloists, with a brilliant record in every branch of band work. Besides having a thorough knowledge of instrumentation, he is a composer and arranger of considerable ability and a conductor of notable grace and magnetic force. He has been bandmaster of the 48th Highlanders since 1895. He is the first band leader to successfully introduce a properly-trained choir of male voices in band concerts, the ten members being all bandsmen who are thoroughly at home in the charming songs of "Auld Scotia."

The band also carries two special vocal soloists of exceptional merit. They are Mr. Walter Malor, concert tenor; and Mr. Edwin B. Hanson, baritone soloist.

Bandmaster Slatter has introduced several other notable features not seen with any other band, among which may be mentioned an innovation much appreciated, the dancing of the bandsmen in national and Scottish dances, including reel O'Tulloch, Scottish reel, etc., and introducing Mr. Alexander Munro, the winner of many championship medals, who is equally at home in the Highland fling, sword dance, shean trews, sailor's hornpipe, Irish jig, reel dancing, etc.

A Scottish concert without the bagpipes would be Hamlet with the Dane left out. Some of the best pipers in the world belong to the pipe band, among whom is Pipe-major Farquhar Beaton, the winner of more prizes than any other man in Canada. Among his past honors are included the championship gold medal of the Chicago world's fair; the championship medal of Edinburgh, Scotland, and the first prize winner in both competitions at the Pan-American Exposition at Buffalo.

Specialty artist Harold Slater has gained widespread renown in his versatile and exceptionally fine performances with so many of the accessory type of musical instruments. He is a finished performer on the grand chimes, the xylophone, glockenspiel bells and other instruments which have a place in all high-class band concerts.

Among the special soloists of the

band may be mentioned musician Harry Howe, the tenor slide trombone soloist, the peer of any; musician George Townley, cornet soloist, whose performances rival those of the famous Levy; and musician Robert Dixon, known to music lovers who have heard him as the silver-toned euphonium soloist.

The carload exhibits and plate displays will be housed in a temporary building to be erected on Alberni street. This building will be 300 feet long, and longer if required. The carload exhibits will be arranged on a 17 feet incline of 45 degrees around the four walls of the building.

Tables six feet wide will occupy the centre of the building, and will extend its entire length. They will be specially constructed stair tables for the display of the plate exhibits, having three 12-inch treads with two 4-inch risers on each side. This arrangement, with a building 50 feet wide, will give a passage-way on each side 10 feet wide. Allowing 13 feet at each end for passage-way, the plate display table will be 250 feet long. Using a 10-inch plate, this immense table will accommodate 1,800 plates of apples. There are five apples to each plate, consequently a grand total of 9,000 apples will be on display on this table, or enough for a half-apple to each boy and girl in Vancouver. These apples will be the finest grown, and, it is safe to say, will average throughout 3 inches in diameter. If they were all placed in a single row touching one another, the little boy or girl starting with the first apple would have to walk nearly a half mile to reach the last apple in the row.

Suppose a greedy little boy could eat six of those big apples each day, it would take him four years one month and ten days to eat all of the apples in the row.

Those big prize apples would cost a shilling, or approximately 25 cents each Canadian money in London. Hence if a little boy in London would undertake to eat those apples it would cost his papa approximately £464, or \$2,250.

It is estimated by the secretary of the

First Canadian National Apple Show that there will be 21 carloads of apples exhibited at the big exposition. The exhibition rules require 600 boxes for a car, hence there will be a grand total of 12,600 boxes of apples on display. A box of apples is approximately 20 inches long. If all of these boxes of apples were placed end to end and a little boy told that he could have the last box in the row if he would go after it, he would have to walk four miles to get it.

There are 36 to 225 apples in a box, according to size and the manner in which they are packed. The average would therefore be about 130 apples to each box, or a total of 1,638,000 apples in the entire show. These apples will average about $2\frac{1}{4}$ inches in diameter, and if they were placed in a single row it would be 58 1-6 miles long. If a little boy should start to walk to the end of the row and walk $7\frac{1}{2}$ miles a day, it would require nearly eight days to accomplish the feat.

The owners of these apples will receive \$25,000 in prizes, or nearly two dollars per box. After the show is over the apples will sell readily at two to five dollars per box, say an average of \$3.50 per box, or a total of \$44,100. Therefore the exhibitors will receive approximately \$70,000 for the apples exhibited at Canada's First National Apple Show.

Now, then, suppose that a greedy little boy who lives in London should ask his papa to buy all of those apples, how much would it cost his papa at a shilling apiece, and how long would it take that little boy to eat all of them, eating six apples a day?

Let us see. Those apples would cost 1,638,000 shillings, or 81,900 pounds, or approximately \$409,500. And to eat all of them at the rate of six apples per day would take approximately 748 years, or nearly $7\frac{1}{2}$ centuries. If that little boy should live the allotted span of life, three-score and ten years, from the time he began eating the apples he would eat only 153,300 apples, hence it would require ten little boys, each eating six apples a day, 70 years to eat 1,533,000

apples, and there would still remain 105,000 apples to eat, which would require another little boy nearly 48 years to consume at the same rate. In other words, it would require 11 little boys, each eating six apples a day, just 68 years to eat all of those apples. Again, if but one little boy should undertake the task of eating those apples, and should begin eating them on the last day of the First Canadian National Apple Show, November 5, 1910, and at his death another little boy should take up the task to finish the job, and so on, the last apple would not be eaten until November 5, A. D. 2651, not counting the extra day of the leap years. By that time at the present rate of advancement of the human race toward the higher civilization, especially in the field of invention, little boys will be flying through the air like the birds, talking to their papas and mammas miles away with a wireless pocket telephone, and listening to the world's greatest masters of music at home every evening. Certainly those little boys are to be envied; but you must remember that you started it, that there would be no little boys or girls in that future age if it were not for the little boys and girls of today.

There are 11 carload contests; 11 ten-box; 19 five-box; one three-box and 40 single-box contests; two district; a limited two-box, two-barrel, two-basket, two-jar, and two-plate contests; three contests for big apples; five pack awards; 10 sweepstakes besides carload; and 10 contests in home-made and manufactured apple by-products, or a total of 115 contests, exclusive of plate display contests, in which two prizes, amounting to \$5.00, are offered for each variety. There are about 2,000 distinct varieties of apples.

More cash will be paid to prize-winners at this show than ever before offered at any National Apple Exposition. The medals, which are of solid gold, solid silver, and bronze, are the largest, most elaborate and most artistic ever offered by a national exposition. They cost from \$10 for bronze to \$150 for the gold medals.

In addition to cash, medals and diplomas awarded by the management of the show, there are offered in prizes orchard land, nursery stock, spray material, machinery, etc., amounting to several thousands of dollars in value.

In connection with the big show will be held, Wednesday, November 2nd, a pomological convention, to be attended by the fruit-growers throughout the Pacific Northwest, for the purpose of formulating recommendations to the American Pomological Society looking to a revision of the quality ratings of a number of the leading commercial varieties of winter apples which are grown to such superior perfection in this favored land. There will be district fruit-growers' conventions and conferences throughout the exposition, thus giving every encouragement to the educational side of the fruit industry.

The judges of the show will be men of the highest standing, both as to character and ability to differentiate varieties and judge the quality of the fruit. The chief judge, Professor H. E. Van Deman, of Washington, D. C., is known throughout America as an expert pomologist.

Professor Van Deman has had charge of the judging of the horticultural exhibits of nearly all of the world's expositions held in America, and is an authority on the interpretation of the rules and regulations of the American Pomological Society, which has promulgated the only recognized standards.

The associate judges are: Mr. H. W. Bunting, St. Catharines, Ont.; Mr. Martin Burrell, M. P., Grand Forks, B. C.; Professor F. C. Sears, Pomologist Massachusetts Agricultural College, Amherst, Mass.; Professor Wilbur K. Newell, President State Board of Horticulture, Gaston, Ore.; and Professor John Craig, Secretary American Pomological Society, Cornell University, Ithaca, N. Y.

Entries for the big show close Monday, October 10, for carloads; and Monday, October 24, 1910, for all other exhibits.

Editorial

OCTOBER.

IN "the old country" this month sees the trees clear of fruit, but in the cider countries apples in all their glory of crimson and gold lie in heaps on the ground. There some lie until the frosty nights set in, for there is an old idea that slight frost will improve an apple for cider-making. The woods are now in their glory. The woods! They were sacred with the Druids and with the ancient Syrians. Shakespeare turned the wood into Fairyland where Titania, Oberon and Puck dwelt:

*The greenwood! the greenwood! to the
bold and happy boy;
The realm of shade is a fairyland of
wonder and of joy.*

The Saxons called the month Wyamonth or Wine-month, and Winter-fulleth for winter in October falleth high. The leaves now begin to fall. Pollard oaks and young beeches retain their withered leaves until the new spring ones push them off. Other trees lose their leaves as follows: Walnut, mulberry, horse-chestnut, sycamore, lime, ash, elm, oak. Apple and pear trees keep their leaves well on towards winter. All over Canada, but particularly in the eastern provinces, this is one of the most beautiful months in the year. The nights are cool, sometimes frosty, the days bright and clear, with cloudless skies; and the maple takes on its brilliant autumn tints, spreading a halo of glory over the woodland landscape, and peace seems to reign supreme.

* * *

LOOKING FORWARD.

IN accordance with the announcement made in our September number, *The Fruit Magazine* appears this month in a new dress, much enlarged, improved, and in regulation standard magazine style. We feel sure that our

readers will find the new form more convenient, and that our advertisers will recognize that in the increased lease of life thus given to our advertising pages their publicity value is materially enhanced.

May we here point out that *The Fruit Magazine* occupies a field peculiarly its own. It has not entered into competition with or in opposition to any of the ordinary fruit and horticultural journals, but aims to fill a long-felt want in the fruit world by giving in concrete form a comprehensive review of the broad and universally significant questions affecting this most important branch of human activity. It is in no sense a local publication, but at least national in its scope, and world-wide in its sympathies and influence.

The fact that it is written more or less from a Pacific Coast standpoint should be welcomed by the Eastern fruit-growers as reflecting the most modern scientific methods of fruit culture, while the editorial staff is by no means ignorant of the requirements and possibilities of the East. Our readers include practically all classes of the intelligent public, because we strive to champion the cause, not only of the fruit-grower and fruit dealer, but of the fruit consumer as well. There is therefore no other magazine published which should be so universally read by all classes, and the phenomenal increase in our circulation proves this to be true.

We take no little pride in the fact that at the end of our first year we have a circulation of ten thousand copies, mostly in Canada, with a very respectable representation in the United States and Great Britain, and with subscribers in practically every other country in the world, except Turkey and Russia.

Our constant effort will be to produce a thoroughly up-to-date non-partisan monthly magazine devoted to the interests of those directly and indirectly

connected with fruit production, fruit handling, and fruit consumption.

Our policy in relation to national development, immigration, labor and capital, and all other public questions affecting the welfare of our readers, continues the same as announced in the editorial columns of the initial number of *The Fruit Magazine* one year ago.

* * *

TO OUR SUBSCRIBERS.

WE have received many communications from our subscribers who have not received, or lost, certain numbers of Volume I of *The Fruit Magazine*, most of which are exhausted, who wish to have the complete year's publication bound in book form.

We have complied with these requests as far as possible, and now wish to announce that we have on hand a few complete sets of Volume I, which we will be glad to supply, either bound or unbound, to those wishing to preserve in book form the many valuable articles contained in our first complete volume.

We shall be glad to quote prices for various styles of binding on application, but we wish to emphasize the fact that the number of complete sets left in stock is limited, and to secure copies orders should be forwarded to us as early as possible.

In years to come, Volume I of *The Fruit Magazine* will increase in value and will undoubtedly command a high price. In the meantime they may be secured from our office for the yearly subscription price, plus the cost of binding and postage.

* * *

IS IT WORTH WHILE?

THE First Canadian National Apple Show, to be held in Vancouver from October 31 to November 5, inclusive, has much to recommend it. Of the desirability or the value of such an exhibition we do not think there is any necessity to waste much space in argument. The advantages of competitive exhibitions have been demonstrated over and over again in almost every de-

partment of activity. Exhibitions, from the little country fair up to the great international shows, have fixed standard types and have enormously improved the quality of our horses, cattle, pigs and poultry. In textiles, in machinery—in fact, in every branch of the world's work, the average of excellence in production has always shown improvement wherever what one man makes or grows has been compared with the product of a competitor.

Moreover, the value of an exhibition has always been greatest in proportion as competition has been extended and specialized. The "corn shows," such as those held at Mitchell, S. D., or the big one held last year at Omaha, the great Live Stock Show at Chicago, or, to take a local example, the Horse Show held here at Vancouver, all prove that interest, both on the part of public and exhibitors, becomes keener, and the quality of the exhibition vastly better, when the exhibition is specialized or restricted to one particular class of production.

Prizes for apples have been competed for almost ever since the local agricultural fair was established. The wide variety of the classes included in such an exhibition—ranging from Clydesdale stallions to a crocheted antimacassar—and the small total sum available for a prize fund, made adequate recognition of the orchard industry impossible, and anything more than local competition out of the question. What was needed was an exhibition wholly devoted to products of the orchard, and one in which the prizes would be of such value as to attract and reward the best efforts of the best growers of the whole of Canada. The State of Washington has such an exhibition, at which are seen in competition entries from every apple-growing state in the Union. The Spokane Apple Show has been a splendid success. The time has come when Canada, in this as in other respects, can measure itself on terms of absolute equality with the very best that our good friends and neighbors in the South can do, and can demonstrate that our natural advantages in the way of fruit growing are at least as good,

that these advantages are as skilfully used, and that Canadian orchard products will bear comparison with the very best that can be grown anywhere. The Canadian National Apple Show will give us the first opportunity to do this in anything like a comprehensive and thorough way.

To us it seems right and fitting that the First Canadian National Apple Show should be held in British Columbia, for among the rapidly developing industries of the Pacific Province none is making more wonderful strides than that of fruit raising. British Columbia is destined to be the Orchard Province of the Dominion. From every corner of the Province, where altitude permits the growth of fruit trees, comes word that orchard acreage is being doubled, trebled and quadrupled. The older fruit districts of the Province report their yields this season as more than twice that of any previous year, and this enormous growth has only now begun. Side by side with this increase in production is a corresponding improvement in quality. Favored with splendid soil and an ideal climate, and with intelligence and skill in growing and packing, the reputation of British Columbia as a fruit-growing province is today a household word wherever the English language is spoken. As a means of making the outside world familiar with our natural resources, the fruit of this Province has been, perhaps, superior even to its forests, and second only to its mines.

The First Canadian National Apple Show is going to be the biggest thing of its kind ever held anywhere. At its very inception it is going to set a new mark and establish a new record. More cash prizes will be paid for the prize winning exhibits than ever before by any National or International Apple Show. In all, more than \$25,000 will be hung up for competition. The prizes in carload classes amount to over \$11,000, and in box and other exhibits to over \$16,000. Then, thousands of dollars will be spent in costly solid gold, gold-embossed, silver and bronze medals. A five-acre fruit farm is one

of the prizes, and another is hundreds of dollars of nursery stock. The sweepstakes prize for the best carload exhibit is \$1,000, and in addition a solid gold medal. Five hundred dollars are offered for displays of large apples. To cover the entire gamut of appledom a bronze medal is offered for the greatest freak apple exhibit. A \$100 gold medal is offered for the most artistically-arranged exhibit, and, as an item of outside interest, gold and silver medals are offered Vancouver merchants for the best store window display during the week of the show. To add to the interest, and keep exhibitors and the public guessing, the Natural Resources Security Co., Ltd. has handed to the manager a cheque for \$500, with a request that he give it as a prize, the class not to be announced until the first day of the show. He has already decided as to what this handsome prize shall be given for. Outside of him no one, not even the donors, know the terms or class in which this prize will be given.

About one-third of the show will be held in the Horse Show Building, near Stanley Park, and the other two-thirds in temporary buildings alongside. The City Council and the British Columbia Electric Railway have given the directors permission to erect a large temporary building on Alberni street. This will be about 400 feet long.

In the big arena of the Horse Show Building will be displayed the district exhibits, also the limited two-box, two-barrel, two-basket, two-jar and two-plate exhibits and the single-box exhibits. The show ring is 75 by 200 feet, and contains almost 5,000 square feet. The exhibits will be arranged around the ring on an incline of 45 degrees. The proposed arrangement will give a continuous display of 17 feet in depth and almost 450 feet in length. With the beautiful coloring of the king of fruits this will present a scene never before equalled in the history of the world.

Completely surrounding the show ring will be the spectators' galleries, with a total seating capacity of 3,000.

The directors, when it was found necessary to erect a temporary building in order to have necessary room, decided to have it big enough, and planned a building 300 feet in length by 50 in breadth. This was to accommodate the carload and the plate exhibits. The latter were to be shown on specially constructed stair tables, each having three 12-inch treads. This would give 250 feet for plate display, and give room for 1,800 plates. It looks, however, as if even this generous accommodation will be insufficient, and that we shall have to increase the length of the building by an additional 100 feet.

Of the success of the show, from the viewpoints both of quality and quantity of exhibits, there cannot now be the slightest doubt. Already entries totalling over 20 carloads are in sight, and every Province in the Dominion and many neighbouring States will be represented. Early in September the manager completed a trip right through to the Atlantic in the interest of the show, and everywhere he met with cordial sympathy for the idea, and enthusiastic and practical support from all interested in the fruit industry.

In the Eastern Provinces this year the apple crop is not a good average, and particularly in Nova Scotia it is practically a failure. This seems to be the only regret of the Eastern apple-growers so far as their interest in the First Canadian National Apple Show is concerned. They would very much like to make an extensive display, but the condition of the apple crop will prevent them from occupying the space which they otherwise would have done. However, recognizing that it is a duty incumbent upon them to show their sympathy and interest in this national enterprise, they are going to do the best they can, and hope to take a larger share in promoting the subsequent National Apple Shows to be held in the future.

The great show to be held in Vancouver the first week in November will be the most extensive in point of exhibits

and cash awards in prizes in the world's history. There will be small exhibits of hardy varieties which have been experimented with and proven a success to a more or less degree in the Provinces of Manitoba, Saskatchewan and Alberta.

The Dominion Government will have an educational display, which will add considerable interest to those visiting the exhibition, and there will be an opportunity to observe the various commercial varieties which are peculiarly suited to the various apple-growing districts throughout the Dominion, thereby enabling the apple-growers all over Canada to discontinue the production of undesirable varieties, and devote their attention to the production of the varieties which have high commercial value, and which may be successfully grown in their particular localities.

The Canadian National Apple Show is now fairly launched and duly recognized as a national institution. It will be an ocular demonstration of the capabilities of the country which will far exceed in value in attracting desirable settlers and making happy and contented Canadians than all the Government immigration literature yet produced.

* * *

LATE, BUT IMPORTANT.

MR. MAXWELL SMITH, manager of the First Canadian National Apple Show, has received from the Natural Resources Security Co., Ltd., a cheque on the new Bank of Vancouver for \$500 with instruction to apply it to the prize awards in connection with the great Apple Show, to be held here October 31st to November 5th, as he sees fit, but on condition that he do not announce the particular class which will be entitled to carry off this handsome cash contribution until the day of the official opening, viz.: October 31st. This information is not to be communicated even to the donors of this splendid prize until it is announced to the public.



THE FRUIT MAGAZINE MEDAL,—FULL SIZE—SOLID GOLD
To be awarded to the Canadian Exhibitor carrying off most First Prizes at the
First Canadian National Apple Show

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

THE daily press in this part of the country has been giving considerable prominence to Canada's First National Apple Show, in connection with Mr. Maxwell Smith's Eastern tour in the interests of the great gathering to be held at Vancouver from October 31 to November 5. Mr. Smith stopped over at Ottawa on his way further East, and was, of course, looked up by newspaper interviewers of the Capital. Some idea of the general trend of the interviews—some idea of the information sought on the one side and given on the other—can be gathered from the following in *The Ottawa Citizen*:

"Mr. Maxwell Smith, Vancouver, B. C., manager of the First Canadian National Apple Show, arrived in the city this morning and is registered at the New Russell. Mr. Smith is making a tour of the Eastern Provinces in the interests of the show, securing exhibits and generally explaining to big fruit-growers the objects and aims of the venture, which will be held in Vancouver from

October 31 to November 5 of this year.

" 'This is Canada's First National Apple Show,' said Mr. Smith to *The Citizen*, 'and while British Columbia has undertaken the burden of financing and promoting this enterprise, it is not our intention or desire that it shall be an annual event in our Province, but that the second, third and possibly fourth shows should be held at different points in the apple-growing districts of Eastern Canada.'

" 'Will exhibitors sending from the East be in the running for a British Columbia market for their apples?' asked *The Citizen* representative.

" 'Better than that,' replied Mr. Smith. 'They will be bidding for a world market. We expect to have present buyers from Eastern Canada, the United States, Australia, New Zealand, Great Britain, France and Germany. And if the Eastern growers show their sympathy and interest in this national enterprise by sending representative exhibits, they may rely on British Columbia returning the

favor at any time when the Canadian National Apple Show may be held in the East.

"We expect to have an exhibition of about 15,000 boxes and barrels covering a floor space of 100,000 square feet, and are offering \$25,000 in premiums," said Mr. Smith, in conclusion.

"His Excellency Earl Grey is honorary president of the first show, and Sir Thomas Shaughnessy president. Mr. Smith leaves for Montreal today, where he will remain tomorrow, thence going to the Maritime provinces."

By the close of the present month returns may be expected from the first of the three trial shipments made by the Dairy and Cold Storage Branch of the Dominion Government to the Mother Country. The fruit for these shipments, selected from the Niagara district, is packed in single-layer cases and forwarded by refrigerator cars and steamship cold storage. Commissioner Rud-dick, referring to the subject in a report published in the last issue of *The Census and Statistics Monthly*, said the acreage under peaches in Ontario was increasing so rapidly that it would not be long before the quantity grown would be greater than our home markets could readily absorb. It was therefore important that outside markets should be looked for and gradually developed, so that when the time arrived there might be a sure outlet for our surplus products. As the extension of markets for farm products is one of the functions of the branch, the trial shipments were decided on by way of a start. The agreement between the Government and the Canadian Pacific and Grand Trunk Railways for the supply of iced cars for the transportation of fruit to Montreal and Quebec expires on the 1st of October. The cost of icing, up to \$5.00 per car, is paid by the department.

Canadian apple exporters will be interested in the results of the experimental shipments of New Zealand apples for the British markets. Advices from Wellington show net returns from the first Nelson experimental shipments of 50c

per case, after payment of all expenses from orchard to purchaser. The shipments were made a full month later than they should have been made to secure the best prices. Much higher prices were received for shipments of specially-selected fruit. It has been found that a large number of apple-growers in the Nelson district averaged 1,000 bushels of apples to the acre during the past season, which at one penny (two cents) a pound nets over \$830 per acre. The Nelson exporters regard the opening shipments as a great success, and are satisfied that a large and profitable trade can be done with the British markets.

Among the trade enquiries in the last weekly report of the Department of Trade and Commerce is one from a Danish importing house, who want the names of Canadian firms in a position to export fresh apples in barrels. In the same issue is a communication from Mr. E. E. Sontum, Canadian Commercial Agent for Norway and Denmark, in which the Norwegian apple crop is dealt with. Mr. Sontum says the crop will



BAND MASTER JOHN SLATER



PART OF ONTARIO'S FRUIT DISPLAY, TORONTO EXHIBITION, 1910.

be a very small one in Norway this year, and prospects, therefore, are for a larger import than usual of both fresh and evaporated apples. He adds: "It is not necessary to repeat in this connection that only first-class fruit will find a market here."

Mr. W. G. Fischer, Canadian Trade Commissioner at Berlin, in his last report to the Department of Trade and Commerce, again discusses the German import trade, with special reference to Canadian imports in the German markets. Among the many Canadian products for which Mr. Fischer says there is a good and increasing market in Germany are apples and other fruits that

can be delivered in good marketable condition. The hope is expressed that shipments of apples especially will be made by Canadian fruit shippers to Hamburg, Berlin and Bremen. The figures given by Mr. Fischer show an enormous expansion in German imports during the past seven years, due chiefly to the rapid growth of population in the last decade, averaging about one million souls per annum. This growth of population, and the limited range of German agricultural products, have operated to increase the demand more and more every year for imported products. Mr. Fischer is of opinion that even better prices for all descriptions of Canadian products, par-

ticularly apples and other fruit, should be procured henceforth in German than in British markets.

Notwithstanding the shipments of fruit this year from the apple-producing countries to British ports, there is already a good and growing demand for additional supplies in the leading markets of the Mother Country. Mr. J. T. Lithgow, Canadian Trade Commissioner at Glasgow, in his last report to the Department of Trade and Commerce, repeats former statements that there was a shortage of apples in that market and that early shipments from Canada should

may export small quantities of rather poor quality. North of Lake Ontario an improvement in quality in some districts is reported; but in the Georgian Bay district no correspondent reports a full crop. Local buyers have been active. Some of the co-operative associations that have established a reputation for good packing and honest marking have reported sales of their entire output at \$3.00 a barrel.

Red Astrachans and the Duchess, packed properly in boxes, sold lately this month in Winnipeg and Calgary at \$2.25 to \$2.50 a box, equivalent to about \$1.25



FAMOUS REEL DANCERS, 48th HIGHLANDERS

command good prices. Similar conditions prevail generally throughout the United Kingdom.

Ontario fruit crop reports to the end of the past month show that in apple orchards where the fruit was not well cared for the Codlin Moth appears to have concentrated on what was left on the trees, and the scab was as bad as usual. The crop of the Fameuse was much lighter than was expected, and of poor quality. Only two correspondents in District No. 1, Southern Ontario, reported a full crop of winter apples. Western Ontario, on the whole, will have scarcely enough apples for home consumption. A few sections, however,

to \$1.50 a box f.o.b. at home station. Early shipments of Duchess, marked No. 2, met with a ready sale at \$5.00 a barrel.

What is locally called probably the most important deal made in apples in the Dominion this season was closed recently at Simcoe, Ont. Mr. J. E. Johnson, manager of the Norfolk Fruit-growers' Association, closed out the entire season's pack to Mr. J. G. Anderson, of Lucknow, Ont. An interesting fact in connection with this deal is that the county of Norfolk was practically unknown as an apple-producing region up to six years ago, when, a dispatch from Simcoe states, Mr. Johnson appeared on

the scene with a co-operative organization of growers, the membership of which is 335. He took up the work of good orchard management and brought it to such perfection in these few short years that the eyes of the entire apple-purchasing world are now turned to Norfolk county.

Fruit wholesalers here are looking for high retail prices for apples of late varieties. The best qualities are expected to go higher proportionately than the medium classes. In those parts of Eastern Canada where the yield has been noticeably reduced by weather conditions, insect visitations and other causes, increased prices will help, it is said, to make up for whatever falling-off there may be in production and quality.

Abundant consignments of peaches, pears, plums and so forth have reached this market throughout the present season, and if there has been a serious shortage in any of the Canadian fruit districts on which the Capital relies for its supplies, little evidence of the fact has come to light here. The receipts have been about up to the average and prices the same. In connection with peaches, the difference in flavor of the imported fruit from California compared with the product of the Canadian Niagara Peninsula appears to have been more marked than usual this summer. In appearance the average California fruit is almost perfect, but in all the best qualities it is inferior in every way to the juicy, delicious, fragrant Canadian product.

British Columbia fruit is not in evidence in this part of the Dominion. Some time ago a most attractive consignment arrived here and was shown at the Central Canada Exhibition. It was greatly admired, and Ottawa wholesalers understood that a sample carload, to begin with, of the choicest British Columbia peaches, pears and plums was to be sent on at once; but it did not come. No further attempt appears to have been made since that time to introduce British Columbia fruit on a large scale here. The impression at the time of the B. C.



PROFESSOR H. E. VAN DEMAN

exhibit was that a full carload of peaches, pears and plums could have been sold in Ottawa to advantage promptly on arrival.

Exceptionally good qualities of nutmeg melons produced in Central Canada have been shown, and quickly disposed of, in this market this season. Several shipments have been made to various cities in the State of New York. It appears the Canadian nutmeg melon is much preferred to melons of the same description produced south of the line.

The enterprising English fruit importers, who have been sending photographers through the Niagara fruit region to take photos with moving picture cameras might possibly, if invited to do so, extend their operations to other parts of the country, notably British Columbia and Nova Scotia. The photos secured include peach pickers at work in the peach orchards, the hauling of the fruit to the markets and shipping points, the loading and moving of the big special

fruit trains, the loading of fruit boats, the packing of the refrigerator cars, and so forth.' It is intended to use these photos for moving pictures to be exhibited throughout Great Britain for advertising purposes.

One of the most attractive features of the Horticultural Hall display of Canadian fruits at the Central Canada Exhibition was the exhibit of fresh fruits from the Kelowna orchards of the Okanagan Valley, British Columbia. Mr. H. H. MacLeay, of Richmond, Quebec, the representative in Eastern Canada of the Central Okanagan Lands, Limited, was in charge, and he was kept busy, from early morning until late at night, from the opening of the fair until the close, answering the questions of interested visitors who crowded around the Kelowna fruits. The display was large, tastefully arranged, and most attractive in every way, and it elicited expressions of surprise and admiration from thousands of people who thronged the hall. It is estimated that some forty-five thousand persons attended the exhibition on Wednesday, the day I saw the Kelowna exhibit, and I can personally vouch for the fact that the exhibit attracted far more attention than anything else in the hall. The apples and peaches were larger, better formed, and more attractive in appearance than in any other similar collection in the building, and the quality, especially of the peaches, was at least equal to the very best samples of Central Canada growth, and far superior to the much-vaunted products of California sold in the Capital. The success of the Kelowna exhibit was so marked that it has been decided to open an office here representing the C. Ok. L. L. interests. In connection with the Kelowna display it may be added that, when it was shown at the Sherbrooke, P. Q., Exhibition, Hon. Sydney Fisher, Dominion Minister of Agriculture, warmly complimented Mr. MacLeay on the beauty of the fruit and the quality of the packing. Cases of fruit freshly arrived here on Wednesday were opened in my presence at Horticultur-

ral Hall, and the contents, after their journey across the continent, were found to be in perfect condition.

A few words, to conclude with, respecting the Central Canada Exhibition. Its rise and progress, like that of the Toronto Fair and similar undertakings all over Canada, has kept pace, and more than kept pace, with the growth of the Dominion at large. The exhibition today is in every practical detail related to



PROFESSOR WILBUR K. NEWELL

the agricultural, the manufacturing and the general development of this part of Canada, a triumphant illustration of practical effort applied to modern industries as found in this great and growing section. His Excellency the Governor-General is patron; Mr. William Hutchison, Dominion Commissioner of Exhibitions, is honorary president; Mr. Thos. C. Bate president, Mr. C. Ross and Mr. G. S. May vice-presidents, and Mr. E. McMahon secretary. It is on the shoulders of Mr. Bate and Mr. McMahon that the heavy responsibilities connected with



BRITISH COLUMBIA'S FRUIT EXHIBIT, SASKATOON, SASK., 1910.

the organization, management and control of the exhibition chiefly rest. They have been associated with the undertaking since its early days, and to them largely belongs the credit of the successes achieved. The exhibition is a striking and most eloquent advertisement of the Capital of Canada, its people, its attractions, its advantages, its business enterprises, and its social standing; for all these are more or less exemplified at the annual fair, and to an extent that can only be fully appreciated by those who are practically familiar with their workings and their widespread ramifications. Canada's fall fairs are many, and they are doing splendid work in building up the country, but to none of them can this statement be more justly applied than to the Central Canada Exhibition.

On the subject of fruit crops in England, and topics connected therewith, Mr. W. A. MacKinnon, Canadian Trade Commissioner in Birmingham, England, reports as follows in a communication published in the weekly report of the Department of Trade and Commerce:

It is now quite evident that fruit crops in England are, on the whole, if not absolutely, a failure, at least very short of a fair average, and the outlook for imported fruit is therefore most attractive. Nevertheless, this statement must not be taken without qualification; there will undoubtedly be a strong and continuous demand, sufficient to absorb all, and more than all, the good fruit which is likely to be sent here. But the mistake too often made by Canadian shippers is to deduce from general scarcity the conclusion that all kinds and qualities of fruit will be acceptable and meet with a ready sale at satisfactory prices. Even when the quality shipped has been fair, individual exporters have again and again had cause to complain that while their No. 1 apples sold to advantage, the No. 2 yielded them little or no return—perhaps enough to pay for the barrels and packing, leaving nothing over for the fruit.

The warning cannot, therefore, be too often repeated nor too strongly emphasized, that England wants practically un-

limited quantities of sound, mature apples of standard varieties in good condition, but that, on the other hand, the markets are quickly demoralized by shipments of undersized, immature or damaged fruit, and can assimilate only moderate quantities of passable No. 2 apples. As a general rule, nothing but disappointment

awaits the exporter who attempts in a year of scarcity to make a profit by shipping inferior fruit some thousands of miles by land and sea, to be offered in the English auction markets. Such fruit is infinitely better consigned to the evaporator or otherwise disposed of locally.

A Significant Report

Regina, Sask., Sept. 12, 1910.

W. E. Scott, Esq.,
Deputy Minister of Agriculture,
Victoria, B. C.

Dear Sir,—

I have the honor to report as follows:

Calgary, Sept. 6.—Dealers here report blackberries coming in limited quantities and arriving a little soft. Demand is also limited. They seem to be unseasonable, now the weather is cool, and further, such an abundance of other varieties of fruit upon the market. Blackberries selling to retailers at \$2.25 per case. I saw plums in the Vernon Fruit

Company's warehouse here; came in by express from the lower mainland; were of good size and well packed, but going with plum rot. Would advise shipping such fruit into local markets or cannery, or, if shipped out, to ship to near-by points. After commission and express charges are deducted there is not much left to the shipper. They have to be picked over and sold at a low price, and at the present low figures realized for that kind of plums there cannot be much return to shippers, and at the same time are not satisfactory to the trade and injurious to the reputation of British Columbia fruit as a whole.



FAMOUS 48th HIGHLANDERS BAND

In Full Dress Highland Costume, most attractive Military Band spectacle in the world.

In conversation with the selling agent for White & Crum, of Lewiston, Idaho, he stated they would handle six hundred carloads of fruit this season; would market two hundred carloads of that amount in these provinces. He further stated they were about sold out of the smaller fruits, namely: plums, prunes, peaches and pears. Had only about five carloads of peaches to offer for sale now. White & Crum control to a great extent the output of Milton & Freewater, Oregon, and also the Alpo-wai Orchard Company's output of Wawawai, Washington. Prunes are being quoted from North Yakima 40c per case in peach boxes; these are not packed and are short in weight two pounds or more in comparison with the four basket plum crate. The packages cost less, no paper being used, and no cost as to packing, and generally a poorer grade and quality of prunes from what I have seen than the fruit put up in plum crates with baskets and paper.

Jobbers at this and other points have spoken to me of the wrapping of apples; they would prefer to have early and fall varieties that are well colored not wrapped. This would only apply to early and fall varieties, and where the distance was not too great for them to be shipped. The reason assigned was that they showed up to better advantage, being much more attractive in appearance, and for that reason sold more rapidly; but the green varieties and winter apples would be better for keeping by being wrapped.

Medicine Hat, September 7.—Car of American mixed fruits arrived here yesterday from Good & Co., Lethbridge, shipped to them by H. J. Shinn & Co., Spokane, for H. W. Ireland & Co., retailers here. The boxes were not marked either with name, grade, tier or variety of fruit. This should not be permitted on the part of the Dominion Government Inspectors—to allow importers to offer for sale, without being marked in conformity with the requirements of the Fruit Marks Act. It is not fair to our growers and shippers in British Columbia.

I may state I have seen some from



MR. MARTIN BURRELL, M. P.

British Columbia not marked. Would advise growers and shippers invariably to do so; it is misleading to purchasers, whether they are jobbers, retailers or consumers.

To date, three carloads of fruit, mainly prunes, have arrived at this point: One car, H. W. Ireland & Co., American fruit; one car, McPherson & Co., American fruit; one car, F. G. Lynd & Co., British Columbia fruit—in all 2,400 cases of prunes, in addition to all that comes in by express and local freight. Prices are being cut very close, jobbers selling to retailers at the following prices:

American prunes in peach boxes..	.85
American prunes in 4-basket crate.	1.00
B. C. prunes in 4-basket crate.....	1.00
B. C. peaches, per case	1.00
American peaches, per case.....	1.00
B. C. apples, per box.....	1.85
American apples, per box.....	1.85
B. C. crabs in pear boxes.....	2.00
B. C. pears	\$2.50 to 2.75

Express agent and dealers report blackberries coming in here in limited quantities, but arriving in good condition. Considerable quantities of plums are coming into this point by express, but at the prices being sold to retailers by jobbers returns to shippers will be unsatisfactory, if consigned.

Calgary, September 8.—Three cars of mixed fruits from British Columbia arrived at Calgary for jobbers yesterday—one car for Plunkett & Savage, one car for F. G. Lyne & Co., and one for the Vernon Fruit Company, all from the lower mainland. Reported in fair con-

dition, average time in transit four days. The markets here are pretty well loaded at present, prunes and plums selling at 85c to \$1.25 per case, according to quality. Large consignments of American fruit are being sent to this market; prices on the better quality are being fairly well maintained to date, the poorer quality selling at the lower prices. Peaches are selling to retailers at \$1.00 per case. Jobbers still report quotations on peaches at 33c from North Yakima and Wenatchie.

prunes in peach boxes at 40c per case. Consignments of American fruits are coming into this point, and one car of Ontario fruit arrived here yesterday on consignment. Express agent and dealers here report blackberries arriving in good condition and in fair quantities; demand good. Dealers report British Columbia fruit of all kinds arrive in excellent condition, and the pack, grade and quality very satisfactory to date. Prices are being hammered down at this point, both by jobbers and retailers, as the following quotations by jobbers to retailers will indicate:



PART OF THE FRUIT AND FLOWER DISPLAY, NANAIMO, B. C., EXHIBITION, 1910

Moose Jaw, September 9.—Jobbers here report quotations from Wenatchie and North Yakima on peaches 33c, and

Ontario plums, 11-quart baskets...	\$.85
Ontario pears, 11-quart baskets...	.75
Ontario tomatoes, 11-quart baskets	.75
Ontario apples, per bbl. No. 1....	6.00
Ontario apples, per bbl. No. 2....	5.50
B. C. apples, Duchess, per box....	2.00
Wash. apples, Gravenstein, per box	2.25
B. C. pears, per box	3.00
B. C. pears, per half box	1.60
B. C. peaches, Champion, per box.	1.00
B. C. peaches, White, Free.....	1.00
Washington peaches, Albertas	1.15
Washington prunes in peach box..	1.00
B. C. prunes, per box.....	1.00
B. C. plums, per box.....	.85

Freight agent reports nine carloads of British Columbia fruit arrived at this point to date, and all in good condition. Dealers here report the arrival of Early Triumph peaches from British Columbia in excellent condition, and of much better quality than anticipated, and are highly pleased with the product, and state they will handle in future. Dealers further report that much larger quantities are being sold this season than ever before. Demand and consumption are greatly increased. A very fine carload of Bartlett pears arrived here yesterday from Kelowna for the Rex Fruit Company. Dealers report them excellent in every respect.

To summarize: Peaches from American points at this date must be practically over, and if growers and shippers in British Columbia can avoid making consignments for a time and push sales in the meantime, even at slightly reduced prices for peaches, with mixed carloads of other fruits, using this as an inducement to jobbers to buy until markets are relieved of the American product, which

prevail at present pretty generally at all the distributing points, I think it would be better. Jobbers here state they do not anticipate very low prices on prunes, and to meet the American competition in prunes I think it advisable, at present, to ship prunes in peach boxes and save cost on package, paper and packing, and less weight of fruit in package. I would not advise this for the lower mainland shipper of prunes and plums, as they do not hold up so well in this package as in the four-basket crate, and it is necessary for fruit to arrive in good condition if the highest market prices are to be obtained. Pears and crabs are firm. I do not think our growers and shippers have any cause to worry about apples, as the jobbers feel disposed to handle our product, having knowledge of our pack, grade and quality of apples now; but prices will be regulated by the American product offered and our growers and shippers must be prepared to meet their prices for the same grade and quality of fruit.

J. C. METCALFE, Commissioner.

Government Spraying Demonstrations

BY W. H. LYNE, VANCOUVER, B. C.

CONSIDERABLE interest is being taken in the Government power spraying demonstration being carried out in the Victoria district, Vancouver Island, operated under the direction of the Provincial Board of Horticulture, Mr. Thomas Cunningham, the old executive officer of the board, devoting part of his staff to the work.

Two of the best power sprayers that could be procured were put in commission the early part of May, along with two up-to-date hand outfits, and in order to accomplish good, effective work in the orchards of the district, and at the same time demonstrate the economy and effect of good machinery, any orchardist

or fruit-grower in the district had the privilege of having his orchard sprayed, upon his agreeing to pay cost of operation.

All four outfits have been kept busy until laid off a few days ago, which speaks well for the interest the fruit-growers of the Victoria district are taking in modern methods of commercial horticulture. The idea of each district owning one or more power spray outfits, according to its needs, is becoming popular.

So much disappointment and loss of valuable time and money have resulted from the use of small, trashy, useless spraying outfits, or bucket pumps, that

many people have become discouraged and simply disgusted with the results, and imagine that spraying is not nearly so effective as they were given to understand it was.

But no matter how good an outfit one may have, it is still up to the man or men who are using it as to just how thoroughly the work is done. Thoroughness is the secret of success in spraying, providing one is spraying at the right time, with the right material.

The 200-gallon spray tank is on the forepart of the machine bed, to which the whole outfit is secured. Inside the tank is a powerful agitator constantly revolving while at work, keeping the spray mixture thoroughly stirred from bottom to top. Next to the tank is the suction pump for filling the tank. A long 2-inch suction hose is attached to this pump, and the other end lowered into the well or cistern from which the water is being obtained. The sprocket connecting the suction pump to the engine is operated by a lever, and the tank is filled in six minutes. Next comes the three-cylinder power or spray pump fitted with safety valve and gauge. Then comes the two-horse power gasoline engine on the back end of the machine bed. This is a Fairbanks Jack-of-all-trades engine, with patent screen water cooler. It can be detached from the pump for use on grain mill, chaff cutter, domestic pump, or any other economic use. Four leads of hose run out from the back part

of the outfit, and a steady 200-pound pressure can be kept up to supply the nozzles at the end of the eight or ten-foot spray rods attached to each hose, developing a dense, misty spray that covers everything it comes in contact with, and driving well home into every crevice it finds. Therein lies the success of a good gasoline power outfit. No need to keep on calling out, "Pump up, there!" to the poor tired man on the pump handle of the old hand outfit. The engine never gets tired; two gallons of gasoline will keep it going all day.

This does not mean that all hand spray pumps are useless. It is not convenient for every fruit-grower to use a gasoline power outfit, and a good hand-pump that will develop 100 to 120 pounds pressure will do good, effective work, but nothing below that can be recommended. After comparing the work of the best hand outfit with that of the gasoline power pump, one has to acknowledge the superiority of the latter.

However, there is no disputing the fact that a fruit-grower can no more afford to neglect pruning, spraying and cultivating his trees, and thinning the fruit when necessary, than a dairyman can afford to neglect the proper feeding and care of his stock. The grower who gives proper attention to his orchard, and puts his fruit on the market properly packed and graded, will make money. The one who does not attend to these details will not make his salt.

The Little Girl that Cried

Once the Little Girl that Cried,
Looking through her tears, espied
Lovely motes of colored light
In the fringes of her eye—
Just as when the weather clears,
And the clouds are put to flight,
There's a rainbow in the sky.
And the Little Girl that Cried,
When she saw this lovely sight—
This fine rainbow in her tears—
Would forget the reason why
She had thought it best to cry.

—Edith M. Thomas.



IRRIGATION WORKS AT WALHACHIN, B. C.

Toronto Exhibition

CANADA'S National Agricultural and Industrial Exhibition this year again demonstrated that it is the greatest annual exhibition of its kind in the world. Every department was well represented, and more extensively than ever before. The attendance also exceeded by 18,000 all previous records, notwithstanding rather unfavorable weather conditions. To the fruitmen the following from *The Fruitman's Guide*, of New York, will be of interest:

"The magnificent display of fruit from British Columbia is one of the first things to catch the eye of the visitor to the Canadian National Exhibition in the Horticultural building. It stands by itself, and is superior to the display made by any other section of the Dominion.

"The peaches, pears, apples, crabs, plums, prunes, apricots, cherries and other varieties are remarkably well matured, and not only good in appearance but luscious to the taste, as the *Guide* correspondent was privileged to test for himself. The principal sorts shown are the Bartlett and Bossack pears, Bradshaw plums, Italian prunes, Wealthy, Gravenstein, Duchess, Thistlewheat and Wolf River apples, Transcendent grapes and Crawford peaches.

"The packing of the fruit is worth notice, the crab apples, plums, apples, etc., making a fine appearance in their boxes after a travel of 2,500 miles. The pack is, however, not a special one for exhibition, but the goods are simply taken from the No. 1 grade of each grower, being the ordinary commercial pack. The apples weigh forty pounds solid to the box, and the plums twenty pounds.

"This exhibit is under the care of E. Bullock-Webster, of Penticton, B. C., who is the exhibition commissioner. It is said that the American visitors to the exhibition give greater attention to the British Columbia exhibit than do the Canadians themselves.

"At the above exhibit the visitor will find a series of handsomely gotten up folders, beautifully illustrated and containing a lot of interesting descriptive reading matter, giving a few facts as to what British Columbia has to offer the investor.

"British Columbia is the Pacific Coast province of Canada, with an area of 395,000 square miles—a territory which means an acreage of 252,800,000. It has a coast line of 7,000 miles, with 182,000,000 acres of forest and woodland. Its population is estimated at 280,000, exclusive of Asiatics. The whole of British Columbia, south of the coast range, is a grazing country up to 3,500 feet, and provides good farming up to 2,500 feet, where irrigation is possible.

"In four years the trade of this province has increased over \$19,000,000. British Columbia's farms and orchards produce over \$7,000,000 annually, and in 1908 it shipped over 6,000 tons of fruit. Its apples, pears, plums and peaches are said to be among the finest in the world, winning the highest awards at exhibitions in Great Britain, Eastern Canada, and even the United States. The capitalist can find in British Columbia a field for the highest profit for his investment, as right at his hand, if he be a manufacturer, are enormous wealth in raw material, unsurpassed shipping facilities and unlimited supplies of coal.

"Rapidly increasing markets at home and in the new provinces of Saskatchewan, Alberta and Manitoba are doing much to insure the development of this tremendous territory. The Orient, Australia, Mexico, Great Britain, Ontario and Eastern Canada can all procure their fruit supplies from British Columbia in advance of other sections, as plums, peaches, etc., mature fully one month earlier than in any part of the Dominion. The fruit-grower will find

many thousands of acres of land awaiting development that would produce all the hardier fruits, as well as peaches, apricots, melons, nuts, etc.

"For the dairyman there are splendid pastures, and good prices for his butter, milk and cream. The poultry man can find a cash home market for his poultry and eggs at remunerative figures. The farmers would be sure of large profits from miscellaneous farming and vegetables. The workingman can rest

assured of good wages in return for reasonable working hours.

"To summarize, British Columbia has: A healthful climate. Inspiring surroundings. Golden opportunities in all walks of life. Just laws well administered. A complete modern educational system, free, undenominational, primary and high schools. All the conveniences of civilized life. Health, peace, contentment and happiness."

October in the Slocan

October in the Slocan! the valleys russet-yellow,

The hills all flecked with orange, green and brown,
Hoar-tipped in grim reminder 'mid this carnival of mellow
Multicolor, of the Winter coming down.

The birches with their gaily-colored banners waving bravely,
Like some silver-armored troop of olden time;

While the cottonwoods, more sombre, seem to doff their leafage
gravely,

With the murmur of a dim funereal chime.

O the purple of the marshes; their kaleidoscopic splendor!

And the kinnikinnick's enchanted bordering,
And the cranberry low drooping over chipmunk's coy provender,
Where its scarlet globes their wealth of color bring.

Entangled in a thicket of wild cherry, crimson-flaunting

Dark hawthorn clinging fast with thorny bands

To hazel bush and barberry, their own bright hues loud vaunting,
Which flout the dun of placid meadow lands.

Dim sun-flecked aisles, enduring green, of tinting variegated

Pine, fir and yellowed tamarack ablaze,
And the red of rampant rose-pods with the sunlight permeated—
In a glorified expanse of russet haze.

Tall ferns, aloof and stately, flanking orchard-fence and river,

Burnt sienna tipped above the reeds' pale green,
Where the languid shadows lengthen and the undulating quiver
Of the water mirrors weirdly Autumn's sheen.

October in the Slocan! and breezes gently playing

With leaves that lie like tasselled cloth of gold
On tired earth and orchard trees, adreaming now of Maying
In the promise of the buds which they enfold.

—M. Nixon.



WHERE THE FIRST CANADIAN NATIONAL APPLE SHOW WILL BE HELD,
OCTOBER 31 TO NOVEMBER 5, 1910.

Fruit Canneries a Necessity

A REPRESENTATIVE of the Okanagan Fruit Cannery Co. had this to say in Vancouver a few days ago:

"If anybody had told you, not many years back, that you were to experience such a rare treat as this magnificent First Canadian National Apple Show is furnishing, you certainly would have expressed your opinion that a man with such an idea in his head was nothing short of a knave or a fool.

"However, the promoter has brought about great things, and I look for him to bring about greater ones. He is a man of push, strength and action. Consequently, instead of sitting still and talking about what a great thing an Apple Show would be, he was up and doing, and thereby is to be voted the one best friend of the fruit-grower.

"Now that his imagination has turned out to be stern reality, why not relax a bit and profit by listening to far-seeing, long-thinking men of the world for the present?

"Beyond a question of doubt fruit canning is to be one of the biggest industries of the Dominion. It is not so long ago that you heard this same talk in regard to salmon canning. Some listened; they profited. Others laughed; they are being laughed at now.

"Mr. Fruit-grower, do not be of the latter type. It is all to your advantage that a fruit cannery should be located in your near vicinity, and the opportunity is presented to you by the Okanagan Fruit Cannery Company, Ltd."

Injurious Insects

WITH REMEDIES AND PREVENTIVES

By PROFESSOR L. H. BAILEY

INSECTS are of two kinds as regards their manner of taking food—the mandibulate insects, or those which chew or bite their food, as larvæ ("worms") and most beetles; and those which suck their food, as the plant-lice and true bugs. The former class is despatched by poisons, the latter by caustic applications, as kerosene or soap preparations.

ANGLEWORM or EARTHWORM.—The common angleworm often destroys greenhouse plants by its burrowing. It is sometimes annoying in gardens also.

Remedy.—Lime-water applied to the soil.

ANTS.—See **LAWNS**.

APHIDES, PLANT-LICE or GREEN-FLY, and BARK-LICE.—Minute insects of various kinds, feeding upon the tender parts of many plants, both indoors and out.

Remedies.—Kerosene emulsion. Kerosene-and-water emulsion. Hot water (about 125 degrees). Coal-tar fumes. Pyrethrum. Fish-oil soap. Tobacco-water. Alcoholic and water extracts of pyrethrum. Hughes' fir-tree oil. In the greenhouse, fumigation with tobacco. Knock them off with the hose. In window gardens, dry pyrethrum or snuff.

APPLE. Apple-Bucculatrix (*Bucculatrix pomifoliella*, Clemens).—A minute yellow or green larva feeding upon the upper surface of the leaves, causing the lower surface to turn brown. The cocoons are white and slender, and are laid side by side upon the under sides of twigs, where they are conspicuous in winter.

Remedies.—Burn cocoons in winter or apply strong kerosene emul-

sion to them. Arsenites for the larvæ in summer.

Apple-Curculio (*Anthonomus quadrigibbus*, Say).—A soft, white grub, about half an inch long, living in the fruit.

Remedies.—Arsenites as for codlin-moth are usually recommended. Probably jarring them off the tree, as is done for plum-curculio, is the most effective treatment.

Apple Flea-Beetle (*Graptodera foliaceae*, Lec.).—Beetle, one-fifth inch or less long, feeding upon leaves.

Remedy.—Arsenites.

Apple-Maggot or Railroad-Worm (*Trypeta pomonella*, Walsh).—Maggot; infests fall apples mostly, occasionally attacks winter fruit. It tunnels apples through and through, causing the fruit to fall to the earth.

Remedies.—Immediately destroy all infested fruit, pomace, and apple-waste from the house. If the orchard is in sod, burn the grass under the trees in fall or spring; if in cultivation, spade or plough up the soil under the trees in spring. Orchards in sandy soil and with a southern exposure are most affected.

Bark-Louse (*Mytilaspis pomorum*, Bouche).—Minute insects feeding upon the tender shoots, most active in early spring. Later in the season the insect secretes a scale, under which it lives. The old scales become conspicuous on the twigs.

Preventive.—Plant unaffected trees.

Remedies.—Spray with kerosene emulsion, carbolic acid wash, soda wash, or soap-and-soda wash, when shoots start. Wash limbs in winter or before leaves start, with soap-suds or lye water. Scrape off lice.

Blight.—See under PEAR.

Bud-Moth (*Tmetocera ocellana*, Fabr.).—A minute insect, the larvæ destroying the flower-buds of apples, pears, plums, etc.

Remedies.—Arsenites applied when the buds begin to open, and again ten days later. Burn infested leaves in June.

Canker-Worm (*Paleacrita vernata*, Peck).—Larva; “a measuring worm,” an inch long, dark and variously striped, feeding upon the leaves.

Preventive.—Bands smeared with tar or printer’s ink, or similar devices, placed about the trunk of the tree to prevent the wingless females from climbing. Tedious.

Remedies.—Arsenites, thoroughly applied in spray, are very effective. Jar the worms into straw, and burn the straw.

Codlin-Moth (*Carpocapsa pomonella*, Linn.).—Larva (offspring of a small greyish moth), three-fourths inch long, pinkish, feeding in fruit; generally two broods.

Remedies.—Arsenites applied just after the blossoms fall and again ten days or two weeks later. A third application is rarely necessary. The arsenites may be applied with Bordeaux mixture when spraying for the apple-scab. Swine in the orchard. Cloth band about the trunk of the tree, which is examined at intervals of seven to nine days for larvæ and chrysalides.

Fall Web-Worm (*Hyphantria cunea*, Drury).—Hairy larva, about an inch long, varying from grey to pale yellow or bluish black, feeding upon the leaves of many trees, in tents or webs.

Remedies.—Destroy by burning the webs, or removing them and crushing the larvæ. Spray with arsenites.

Flat-headed Borer (*Chrysobothris femorata*, Fabr.).—Larva about an inch long, flesh-colored, the second segment (“head”) greatly enlarged; boring under the bark and

sometimes into the wood. They are readily located in late summer or fall by the dead and sunken patches of bark.

Preventive.—Soap and carbolic acid washes applied early in June and July. Keep trees vigorous.

Remedies.—Dig out the borers in early summer and fall. Encourage woodpeckers.

Pear Twig-Beetle.—See under PEAR.

Plum-Curculio (*Conotrachelus nennuphar*, Herbst).—Beetle; punctures the fruit and causes it to become distorted.

Remedies.—Arsenites. Often recommended (but of doubtful efficiency) to plant plum trees at intervals throughout the orchard to attract the curculio, and fight the insects on the plums. See under PLUM. Jarring on to sheets is probably the surest procedure.

Railroad-Worm.—See Apple-Maggot.

Root-Louse, “American Blight” of England (*Schizoneura lanigera*, Hausm.).—A minute insect which causes swellings upon the roots of the tree, impairing its vitality, or killing it. In another form the insect attacks the young branches. It is then conspicuous from its cottony covering. The treatment for aphids is useful here.

Remedies.—Hot water. Corrosive sublimate wash. Scalding hot water may be poured on the bare roots of trees standing in the soil, or nursery stock may be dipped in water having a temperature of 120 degrees to 150 degrees. Kerosene emulsion or tobacco dug in about the tree. Infested nursery trees should be dipped in kerosene emulsion—root and top—before they are set in the orchard. Mulching about trees is said to bring the lice nearer the surface.

Rose-Beetle.—See under ROSE. There is practically no remedy for the rose-beetle on large orchard trees. Ravages can be prevented, to a large extent, by the lime spray and the emulsions. Very heavy applications

of Bordeaux mixture sometimes act as a repellent.

Round-headed Borers (*Saperda candida*, Fabr., and *S. cretata*, Newm.).—Larva, an inch long when mature, bores into the tree. It remains in the larval state three years.

Preventive.—Soap and carbolic acid, and various other washes applied early in June and July.

Remedies.—Dig out borers in the fall. Force some caustic material, as soda-wash, into the burrows by means of a small syringe. Insert a wire into the holes. The only safe procedure is to watch the trees carefully for the chips cast out by the borers, and to examine the trees fall and spring, and dig out the larvæ with a knife.

Tent-Caterpillars (*Clisiocampa Americana*, Harris, and *C. sylvatica*, Harris).—Larva, nearly two inches long, spotted and striped with yellow, white, and black; feeding upon the leaves. They congregate in the tents at night and in cool weather, and forage out upon the branches during the day.

Remedies.—Arsenites, as for codlin moth. Burn out nests with torch. Pick off egg-masses from twigs during winter and spring.

Tussock-Moth (*Orgyia leucostigma*, Sm. and Abb.).—A handsome caterpillar, an inch long, bright yellow with red markings, very hairy. Eats the leaves.

Remedy.—Arsenites. Collect frothy egg-masses in fall.

Twig-Borer (*Amphicerus (Bostrichus) bicaudatus*, Say).—Beetle, three-eighths inch long, cylindrical and dark brown, boring into twigs of apple, pear, and other trees. The beetle enters just above a bud.

Remedies.—Burn the twigs. Catch insects in mating season.

Twig-Pruners (*Elaphidion parallelum*, Newm., and *E. villosum*, Fabr.).—Yellowish white larvæ, about a half-inch long, boring into young twigs, causing them to die and break off.

Remedy.—Burn the twigs.

APRICOT. Pear Twig-Beetle.—See under PEAR.

Pin-hole Borer.—See under PEACH.

Plum-Curculio.—See under PLUM.

ASPARAGUS. Asparagus - Beetle (*Crioceris Asparagi*, Linn.).—Beetle, less than one-fourth inch in length, yellow, red, and shining black, with conspicuous ornamentation, feeding upon the tender shoots. Larva feeds upon the leaves and tender bark.

Remedies.—Freshly slaked lime dusted on before the dew has disappeared in the morning. Poultry. Draw the hand over the stalks from bottom to top, crushing all the eggs; repeating two or three times during the season will keep them in check. Arsenites, after the marketing season has passed.

ASTER. Aster-Worm.—A small larva boring in the stem of garden asters about the time they begin to flower, causing the heads to droop.

All infested stalks should be burned.

BEAN. Bean-Weevil or Bean-Bug (*Bruchus obtectus*, Say).—Closely resembles the pea-weevil, which see for description and remedies.

BAG-WORM OR BASKET-WORM (*Thridopteryx ephemeraeformis*, Haw.).—Larva working in singular dependent bags, and feeding upon many kinds of trees, both evergreen and deciduous. In winter the bags, empty or containing eggs, are conspicuous, hanging from the branches.

Remedies.—Hand-picking. Arsenites.

BARK-LICE.—See under APHIDES.

BLACKBERRY. Cane-Borer.—See under RASPBERRY.

Root Gall-Fly.—See under RASPBERRY.

Snowy Cricket.—See under RASPBERRY.

BLISTER-BEETLE (*Lytta* two or three species).—Soft-shelled, long-necked, and slim black or grey spry beetles, feeding upon the leaves of many trees and garden plants.

Remedies.—Arsenites. Jarring.

CABBAGE. Cabbage-Worm, or Cabbage-Butterfly (*Pieris Rapae*, Linn.).—Larva an inch long, green with yellow and black markings, feeding upon the heads; two broods.

Remedies.—Pyrethrum mixed with flour, or in water decoction. Hot water (temperature from 140 degrees to 160 degrees), applied forcibly in a fine spray. Kerosene emulsion. Lye wash. Arsenites: 1 ounce Paris green or London purple to 6 pounds flour, applied while the plant is wet; should not be used after the plant begins to head. Salt water sprinkled into the head. Pyrethrum, dry or in decoction.

Flea-Beetle.—See Flea-Beetle, under F.

Green Lettuce-Worm.—See under LETTUCE.

Harlequin Cabbage-Bug (*Murgantia histrionica*, Hahn).—Bug about a half-inch long, gaudily colored with orange dots and stripes over a blue-black ground, feeding upon cabbage; two to six broods.

Remedies.—Hand-picking. Place blocks about the patch and the bugs will collect under them. In the fall make small piles of the rubbish in the patch and burn them at the approach of winter.

Lice.—Kerosene emulsion. See APHIDES.

Maggot (*Phorbia Brassicae*, Bouche).—A minute white maggot, the larva of a small fly, eating into the crown and roots of young cabbage and cauliflower, radish, and turnip plants.

Remedies.—Carbolic acid emulsion applied the day following the transplanting of the cabbage plants, and repeated once a week for several applications. Remove a little earth from about the plants and spray on the emulsion forcibly. Bisulphide of carbon is generally preferable on cabbages and cauliflowers, however. Use about one teaspoonful to the plant, inserting it in a hole in the soil just underneath, but not in contact with, the root.

Press the hole together immediately to prevent the escape of the vapor. All infested plants should be burned.

The "club-root" of cabbage is not due to the maggot, but to a fungus.

CARNATION. Twitter.—A peculiar curling and tying-up of the leaves and flower-beds on the tips of the stems. Probably due to various species of insects, one of them a plant-louse.

Remedy.—Cut off and burn the affected part.

CARROT. Parsley-Worm.—See under PARSLEY.

CAULIFLOWER. Cauliflower or Cabbage Worm.—See under CABBAGE.

Maggot.—See under CABBAGE.

CELERY. Green Lettuce-Worm.—See under LETTUCE.

Parsley-Worm.—See under PARSLEY.

CHERRY. Canker-Worm.—See under APPLE.

Plum-Curculio.—See under PLUM.

Rose-Beetle.—See under ROSE and APPLE.

Slug (*Selandria Cerasi*, Peck).—Larva, one-half inch long, blackish and slimy, feeding upon the leaves; two broods.

Remedies.—Arsenites, for the second brood (which usually appears after the fruit is off), and for the first brood if the trees are not bearing. Hellebore in water. Pyrethrum. Air-slaked lime. Road-dust. Catch mature insects by jarring trees late in the evening or early in the morning.

CHESTNUT. Weevil (*Balaninus* sp.).—A grub working in chestnuts, making them wormy. The weevil is a curculio-like insect.

Preventives.—Destroy wild trees where the insects breed. Plant the most immune varieties.

Remedy.—Gather and destroy the infested nuts immediately after they fall.

CHRYSANTHEMUM. Green Lettuce-Worm.—See under LETTUCE.

Chrysanthemum Leaf-Miner (*Oscinis*

sp.).—Works upon the leaves of the chrysanthemum.

Remedy.—Hand-picking.

CORN. Bud - Worm.—See TOMATO FRUIT-WORM.

Cornstalk-Borer (*Helotropha atra*, Get.).—Larva, grey and striped, boring into the stalk.

Remedies.—See CUT-WORM.

Grain-Aphodius (*Aphodius granarius*, Linn.).—Beetle, one-eighth inch long, shining black, feeding on kernels in the ground before they sprout.

Remedy.—Soak kernels in water, then stir them in a mixture of Paris green, one part to twenty parts of flour.

Root Web-Worm (*Crambus* sp.).—Larva feeding in a web on the surface or just below it, on the roots of corn.

Preventive.—Avoid planting corn on sod land where there is any suspicion of the insect having been at work. Fall ploughing.

Weevil or Grain-Beetle (*Silvanus Surinamensis*, Linn.).—Reddish-brown beetle about a tenth of an inch long, feeding in stored corn and grain.

Remedy.—Bisulphide of carbon.

The larva of the Angoumois Grain Moth (*Gelechia cerealella*, Oliv.) also devours stored grain. The same remedy applies.

CRANBERRY. Cranberry-Aphis or Louse. *Remedy.*—Flooding. See also under APHIDES.

Cranberry Saw-Fly (*Pristiphora identidem*, Norton).—Larva, less than one-half inch long, greenish, feeding upon the leaves; two broods.

Remedies.—Flooding. Probably hellebore and arsenites.

Fire-Worm, Cranberry-Worm, or Black-headed Cranberry - Worm (*Rhopobota vacciniana*, Packard).—Small larva, green, black-headed, feeding upon the shoots and young leaves, drawing them together by silken threads; two broods.

Remedies.—Flooding for two or three days when the worms are

small. Arsenites. Attract the moths to fires at night.

Fruit-Worm (*Acrobasis Vaccinni*, Riley).—Small worm working in the fruits, eating out the insides.

Remedy.—Thorough application of arsenites as soon as the berries are set.

Weevil (*Anthonomus suturalis*, Lec.).—Beetle, less than one-fourth inch long; cuts off the flower-buds.

Remedy.—Flooding.

Yellow-headed Cranberry-Worm (*Teras vacciniivorana*, Packard).—Stout, yellowish-green, small caterpillar, with a yellow head, webbing up the leaves as it works.

Preventive.—Hold the water late on the bog in spring to prevent egg-laying.

Remedy.—Flood the bog 24 to 36 hours when the worms are small.

CUCUMBER. Cucumber or Pickle-Worm (*Eudiotis nitidalis*, Cram.).—Larva, about an inch long, yellowish white, tinged with green, boring into cucumbers; two broods.

Remedies.—Hand-picking at the first appearance of the caterpillars. Destroy infested fruits.

Melon-Worm.—See under MELON.

Spotted Cucumber-Beetle (*Diabrotica 12-punctata*, Oliv.).—Beetle, yellowish and black spotted, about one-fourth inch long, feeding upon the leaves and fruit. Sometimes attacks fruit trees, and the larva may injure roots of corn.

Remedies.—Same as for Striped Cucumber-Beetle, below.

Striped Cucumber-Beetle (*Diabrotica vittata*, Fabr.).—Beetle, one-fourth inch long, yellow with black stripes, feeding on leaves. Larva, one-eighth inch long and size of a pin, feeding on roots; two broods.

Preventive.—Cheap boxes covered with thin muslin or screens of mosquito-netting, placed over young plants.

Remedies.—Arsenites in flour. Ashes, lime, plaster or fine road-dust sprinkled on the plants every two or three days when they are wet. Air-

slacked lime. Plaster and kerosene. Tobacco powder, applied liberally. Apply remedies when dew is in, and see that it strikes the under side of the leaves.

CURRENT. Borer (*Sesia tipuliformis*, Linn.).—A whitish larva, boring in the canes of currants, and sometimes of gooseberries. The larva remains in the cane over winter.

Remedy.—In fall and early spring cut and burn all affected canes. These canes are distinguished before cutting by lack of vigor, and by limberness.

Currant-Worm, or Currant and Gooseberry Saw-Fly (*Nematus ventricosus*, Klub).—Larva, about three-fourths inch long, yellow green, feeding upon the leaves of red and white varieties; two to four broods.

Remedies.—White hellebore, applied early. Arsenites for the early brood. Treatment should begin whilst the larvæ are on the lowermost leaves of the bushes. Before the leaves are fully grown, the holes made by the worms may be seen. The second brood is best destroyed by killing the first brood.

Currant Measuring or Span-Worm (*Eufitchia (Abraxis) ribearia*, Fitch.).—Larva somewhat over an inch long, with stripes and dotted with yellow or black, feeding upon the leaves.

Remedies.—Hellebore, applied stronger than for currant-worm. Arsenites, if the bushes are not bearing. Hand-picking.

Four-striped Plant-Bug.—See under F. **Green Leaf-Hopper** (*Empoa albopicta*, Forbes).—Small insect working upon the under surface of currant and gooseberry leaves. Also upon the apple.

Remedies.—Pyrethrum. Kerosene emulsion. Tobacco-dust.

CUT-WORM.—Various species of *Agrotis* and related genera. Soft brown or grey worms, of varied kinds, feeding upon the roots, crown, or even the tops of plants.

Preventives and Remedies.—En-

circle the stem of the plant with heavy paper or tin. Arsenites sprinkled upon small bunches of fresh grass or clover, which are scattered at short intervals about the garden towards evening. They will often collect under boards or blocks. Arsenites mixed with shorts, and placed about the plants. Make two or three deep holes by the side of the plant with a pointed stick; the worms will fall in and cannot escape. Dig them out. Plough infested land in fall to give birds a chance to find the worms. Kainit or muriate of potash applied liberally as a fertilizer has been advised.

CUT-WORM, CLIMBING.—Several species. The worms climb small trees of various kinds at night and eat out the buds.

Preventive.—Strip of cotton batting tied about the tree by its lower edge and the top then rolled down like a boot-leg. The worms cannot climb over the cotton. Use baits.

Remedies.—Arsenites. Hellebore.

DAHLIA. Four-striped Plant-Bug.—See under F.

Green Lettuce-Worm.—See under LETTUCE.

EGG-PLANT. Potato-Beetle.—See under POTATO.

ELM. Canker - Worm.—See under APPLE.

Elm Leaf-Beetle (*Galleruca xanthomeloena*, Schr.).—A small beetle, imported from Europe, which causes great devastation in some of the eastern States by eating the green matter from elm leaves, causing the tree to appear as if scorched.

Remedy.—Arsenites with kerosene emulsion.

Willow-Worm.—Seen under WILLOW.

ENDIVE. Green Lettuce-Worm.—See under LETTUCE.

FLEA-BEETLE (*Phyllotreta vittata*, Fabr.; *Halitica striolata*, Harris).—A minute black-spotted beetle, feeding upon many plants, as turnip, cabbage, radish, mustard, potato, strawberry, and stocks. It jumps upon being disturbed. Closely related

species attack various plants. Very destructive to plants which are just appearing above the surface.

Remedies.—There are no reliable preventives or remedies. Arsenites, applied dry while the dew is on, are good. Land plaster, lime, ashes, and tobacco-dust, applied in the same manner, are more or less effective. Tobacco decoction used very liberally. Wood ashes applied liberally. Sometimes ashes injure the plants. Kerosene emulsion thrown with great force against the plants. Calomel, mixed with flour or ashes. A heavy application of Bordeaux mixture and soap is one of the best repellants. The same remedies apply to other flea-beetles.

FOUR-STRIPED PLANT-BUG (*Paecilopapus lineatus*, Fabr.).—A bright yellow, black-striped bug about one-third of an inch long, puncturing the young leaves and shoots of many plants.

Remedies.—Jarring at any time of day into a dish of dilute kerosene. Kerosene emulsion (2) (diluted five times) when the bugs are young, in their nymphal stage. Cut off and burn the tips of the growing shoots in early spring to destroy the eggs.

GALLS.—See ROOT-GALL.

GIPSY-MOTH. (*Ocneria dispar*, Linn.).—Larva, nearly two inches long when mature, very hairy, nearly black, with a yellow stripe along back and sides. Devours many kinds of foliage. Confined to eastern Massachusetts, where it was introduced from Europe about 1869. It is feared that it will become a serious pest.

Remedy.—Spray with arsenites (particularly arsenate of lead) as soon as the caterpillars hatch in the spring.

GOOSEBERRY. Currant-Borer.—See under CURRANT.

Currant Measuring or Span-Worm.—See under CURRANT.

Four-striped Plant-Bug.—See under F.
Gooseberry or Currant-Worm.—See under CURRANT.

Gooseberry Fruit-Worm (*Dakruma convolutella*, Hubn.).—Larva, about three-fourths inch long, greenish or yellowish, feeding in the berry, causing it to ripen prematurely.

Preventive.—Spray just before eggs are laid with the sulphur and whale-oil soap wash.

Remedies.—Destroy affected berries. Clean cultivation. Poultry. Green Leaf-Hopper.—See under CURRANT.

GRAPE. Apple-Tree Borer.—See under APPLE.

Grape-Berry Worm (*Eudemis botrana*, Schiff.).—Larva, about one-fourth inch long, feeding in the berry, often securing three or four together in a web; two broods.

Remedy.—Burn the affected berries before the larva escapes.

Grape-Curculio (*Craponius inaequalis*, Say).—Larva, small, black with a greyish tint. Infests the grape in June and July, causing a little black hole in the skin and a discoloration of the berry immediately around it.

Remedies.—Jarring and removing berries. The beetle may be jarred down on sheets, as with the plum-curculio. Bagging the clusters.

Grape-Seed Worm (*Isosoma vitis*, Saunders).—A minute grub, living in the seed of the grape and causing it to become distorted. The injured grapes shrivel.

Remedy.—Burn the affected fruit.

Grape-Slug or Saw-Fly (*Selandria vitis*, Harris).—Larva about one-half inch long, yellowish green with black points, feeding upon the leaves; two broods.

Remedies.—Arsenites. Hellebore. **Grape-Vine Fidia** (*Fidia viticida*, Walsh).—Beetle, resembles the rose-bug, somewhat shorter and broader. It appears during June and July, riddling the leaves. The larva also attacks the roots of grapes, seeming to prefer the Worden.

Remedies.—The beetles can be killed by strong arsenical sprays, and the larvæ on the roots by bisulphide of carbon.

(To be continued.)

Canadian National Apple Show

FINAL REVISION OF PREMIUM LIST

\$10,375 To Be Awarded in Class 1.

THIS class will include straight and mixed carloads of standard commercial varieties, packed in boxes or barrels, 600 boxes or 150 barrels to the car, as follows: Straight carloads—Northern Spy, Gravenstein, Fameuse, Spitzenberg, Yellow Newtown, Grimes Golden, King of Tompkins, McIntosh, Jonathan, and Winesap or Stayman. Mixed carloads may be made up from any or all of the varieties named as above, and any or all of the following varieties: Wagener, Wealthy, Rome Beauty, Delicious, King David, Black Ben or Gano, Arkansas Black, Rhode Island Greening, Mann, Ontario, Blenheim Orange, Cox's Orange Pippin, Winter Banana, Hubbardston's Nunsuch and White Winter or Blue Pearmain.

Any number of boxes or barrels may be shipped, if the shipper uses a large car, but only the prescribed number of boxes or barrels can be exhibited in this class. In making the award, judges will consider: First, value of the varieties for the purposes to which they may be adapted; second, color, size and uniformity of fruit; third, freedom from blemishes; fourth, pack.

Sweepstakes—First prize, Central Okanagan Lands, Limited, Kelowna, B. C., Special, \$500 cash, and \$500 by the management. Total, \$1,000 cash and \$100 solid gold medal; second prize, A. J. Smith, Peach Cliff, Okanagan Falls, B. C., Special, 5 acres of fruit land, value \$750, or \$500 cash, and \$50 solid silver gold-embossed medal; third prize, \$25 solid silver medal.

Carload Exhibits.

	1st.	2nd.	3rd.
No. 1—Northern Spy....	\$500	\$250	\$100
No. 2—Gravenstein.....	500	250	100
No. 3—Fameuse	500	250	100
No. 4—Spitzenberg	500	250	100
No. 5—Yellow Newtown.	500	250	100
No. 6—Grimes Golden...	500	250	100
No. 7—King of Tompkins	500	250	100
No. 8—McIntosh	500	250	100
No. 9—Jonathan	500	250	100
No. 10—Winesap or Stayman	500	250	100

No. 11—Mixed carload varieties for sweepstakes, mixed carload to govern 500 250 100

Note—First and second prize awards in the sweepstakes contest will not be eligible to cash prizes in the regular carload contest.

\$1,110 To Be Awarded in Class 2—District Displays.

No. 280—To carry out the national scope of the Exposition, the management has determined to eliminate competition within districts, and to offer prizes for districts exhibiting against one another. A province, state, or a specified locality within a province or state may constitute a district under this class.

Conditions.

Any number of varieties may be entered; any size, color or shape; may be packed in boxes, barrels, baskets, or jars, or shown on plates; arranged in any style desired; decorated as wished. The only restriction will be a space limit for each exhibit of 12 by 21 feet.

Scoring.

The district displays will be scored as follows: Best artistic arrangement of exhibit 25 points, quality 20, color 15, condition 20, size 10, uniformity 10.

The Prizes.

First prize, \$500 cash and \$100 solid gold medal; second prize, \$250 cash and \$50 solid silver gold-embossed medal; third prize, \$100 cash and \$25 solid silver medal; fourth prize, \$50 cash and \$10 bronze medal; fifth prize, \$25 cash and diploma.

\$1,947.50 To Be Awarded in Class 3—Ten Box Display.

	1st.	2nd.	3rd.
No. 12—Northern Spy...	\$100	\$50	\$25
No. 13—Gravenstein	100	50	25
No. 14—Fameuse or Snow	100	50	25
No. 15—Esopus Spitzenberg	100	50	25
No. 16—Yellow Newtown.			
Washington Nursery Company's Special, of Toppenish, Wash., 250 Yellow Newtown trees, 1-year grafts, 4ft. and			

1st. 2nd. 3rd.

up, value \$62.50, and \$50 cash by the management. Total	\$112.50	\$50	\$25
No. 17—Grimes Golden...	100	50	25
No. 18—King of Tompkins	100	50	25
No. 19—McIntosh	100	50	25
No. 20—Jonathan. Quaker Nurseries Special, of Salem, Ore., 50 Royal Ann, 25 Bing and 25 Lambert cherries, and 50 Moorpark apricot trees, value \$60, and \$50 cash by the management. Total	110	50	25
No. 21 — Cox's Orange Pippin	100	50	25
No. 22—Winesap	100	50	25
Ten boxes or six barrels will be considered an entry in this class.			

\$1,550 To Be Awarded in Class 4—**Five Box Display.**

No. 23—Delicious	\$50	\$25	\$10
No. 24—Blenheim Orange...	50	25	10
No. 25—Wagener. Carlton Nursery Company, of Carlton, Ore., Special, 100 Royal Ann cherry trees, value \$35, and \$25 cash by the management. Total	60	25	10
No. 26—Rome Beauty. Milton Nursery Company's Special, Milton, Ore., 250 Rome Beauty trees, value 62.50	25	10	
No. 27—Wealthy. Vineland Nurseries Company's Special, Clarkston, Wash, 200 Jonathan apple trees, value \$50, and \$12.50 cash by the management. Total ..	62.50	25	10
No. 28—Black Ben or Gano.	50	25	10
No. 29—Arkansas Black....	50	25	10
No. 30—Rhode Island Greening	50	25	10
No. 31—Ontario	50	25	10
No. 32—Winter Banana....	50	25	10
No. 33—White Winter Pearmain	50	25	10
No. 34—Stayman	50	25	10
No. 35—Hubbardston's Nunsuch	50	25	10
No. 35a — Banks or Red Gravenstein	50	25	10
No. 35b—Yellow Bellflower. Capital City Nursery Co., Salem, Ore., Special. First prize 50 Franquette walnut trees, value \$75	75	25	10

1st. 2nd. 3rd.

No. 35c—Baldwin. Capital City Nursery Co., Salem, Ore., Special. First, 75 pear trees, standard varieties, value \$45, and \$20 cash by management. Total	\$65	\$25	\$10
No. 35d—Paragon or Mammoth Black Twig. Capital City Nursery Co., Salem, Ore., Special. First prize 75 plum trees, standard varieties, value \$45, and \$20 cash by the management. Total	65	25	10
No. 35e—King David. Albany Nurseries, Special, Albany, Ore. First prize, choice of any nursery stock to value of \$50, and \$15 cash by the management. Total	65	25	10
Five boxes or two barrels will constitute an entry in this class.			

\$1,900 To Be Awarded in Class 5—**Single Box Display.**

No. 36—Northern Spy. Fraser Valley Nurseries, Ltd., Aldergrove, B. C., Special, 100 Rome Beauty apple trees, value \$25, and \$10 cash by the management. Total	\$35	\$15	\$5
No. 37—Gravenstein	25	15	5
No. 38—Fameuse or Snow..	25	15	5
No. 39—Esopus Spitzenberg. Oregon Nursery Co., Orenco, Ore., Special, 100 Esopus Spitzenberg trees, value \$25, and \$10 cash by the management. Total	35	15	5
No. 40—Yellow Newtown. Oregon Nursery Co., Orenco, Ore., Special, 100 Yellow Newtown trees, value \$25, and \$10 cash by the management. Total	35	15	5
No. 41—Grimes Golden. Fraser Valley Nursery, Ltd., Aldergrove, B. C., Special, 100 Winter Banana apple trees, value \$25, and \$10 cash by the management. Total	35	15	5
No. 42—King of Tompkins. Layritz Nursery, Victoria, B. C., Special, 100 King of Tompkins trees, value \$25, and \$10 cash by the management. Total	35	15	5

1st.2nd.3rd.

No. 43—McIntosh. Oregon Nursery Co., Orenco, Ore., Special, 100 McIntosh Red trees, value \$25, and \$10 cash by the management. Total	\$35	\$15	\$5
No. 44—Jonathan. Layritz Nursery, Victoria, B. C., Special, 100 Jonathan apple trees, value \$25, and \$10 cash by the management. Total	35	15	5
No. 45—Cox's Orange Pippin. Layritz Nursery, Victoria, B. C., Special, 100 Cox's Orange Pippin trees, value	35	15	5
No. 46—Delicious	25	15	5
No. 47—Blenheim Orange....	25	15	5
No. 48—Wagener	25	15	5
No. 49—Rome Beauty. F. W. Meneray, Crescent Nursery Co., Council Bluffs, Iowa, Special, 50 Montmorency cherry trees, \$17.50, and \$17.50 cash by the management. Total	35	15	5
No. 50—Winesap	25	15	5
No. 51—King David	25	15	5
No. 52—Wealthy. Fraser Valley Nurseries, Ltd., Aldergrove, B. C., Special, 100 Esopus Spitzenberg apple trees, value \$25, and \$10 in cash by the management. Total	35	15	5
No. 53—Black Ben or Gano..	25	15	5
No. 54—Rhode Island Greening	25	15	5
No. 55—Arkansas Black	25	15	5
No. 56—Ontario	25	15	5
No. 57—Winter Banana, Fraser Valley Nurseries, Ltd., Aldergrove, B. C., Special, 100 Wealthy apple trees, value \$25, and \$10 by the management. Total	35	15	5
No. 58—White Winter Pearmain	25	15	5
No. 59—Mann	25	15	5
No. 60—Hubbardston's Nunsuch	25	15	5
No. 61—Yellow Bellflower ..	25	15	5
No. 62 — Mammoth Black Twig (Arkansas)	25	15	5
No. 63—Alexander	25	15	5
No. 64—Ben Davis	25	15	5
No. 65—Baldwin. Lafayette Nursery Co., Lafayette, Ore., Special, 50 Royal Ann			

1st.2nd.3rd.

cherry trees, value \$17.50, and \$17.50 cash by the management. Total	\$35	\$15	\$5
No. 66—McMahon White ...	25	15	5
No. 67—Maiden Blush	25	15	5
No. 68—Golden Pippin	25	15	5
No. 69—Lady Apple	25	15	5
No. 70—Canada Red	25	15	5
No. 71—Ribston Pippin	25	15	5
No. 72—Stayman, F. W. Meneray, Crescent Nursery Co., Council Bluffs, Iowa, Special, 100 McIntosh Red apple trees, value \$25, and \$10 cash by the management. Total	35	15	5
No. 73—Hoover	25	15	5
No. 74—Ortley	25	15	5
No. 74f — Blue Pearmain. Capital City Nursery Co., Special, Salem, Ore. First prize 100 peach trees, standard varieties, value \$35	35	15	5

**\$4,500 To Be Awarded in Class 6—
Plate Display.**

1st. 2nd.

No. 75—American Beauty.....	\$3	\$2
No. 76—Arkansas Black	3	2
No. 77—Alexander	3	2
No. 78—Anisim	3	2
No. 79—American Pippin	3	2
No. 80—American Rambour.....	3	2
No. 81—Anis	3	2
No. 82—Antonovka	3	2
No. 83—Akin	3	2
No. 84—Arctic	3	2
No. 85—Arnold	3	2
No. 86—Belmont	3	2
No. 87—Bentley	3	2
No. 88—British Columbia	3	2
No. 89—Bramley	3	2
No. 90—Broadwell	3	2
No. 91—Ben Davis	3	2
No. 92—Baldwin	3	2
No. 93—Blenheim	3	2
No. 94—Babbitt	3	2
No. 95—Bailey Sweet.....	3	2
No. 96—Buckingham	3	2
No. 97—Bourne	3	2
No. 98—Baxter	3	2
No. 99—Belle de Boskoop.....	3	2
No. 100—Bethel	3	2
No. 101—Bietigheimer	3	2
No. 102—Black Detroit	3	2
No. 103—Bismarck	3	2
No. 104—Blue Pearmain	3	2
No. 105—Bogdanoff	3	2
No. 106—Boiken	3	2

	1st.	2nd
No. 107—Bottle Greening	\$3	\$2
No. 108—Beach (Apple of Commerce)	3	2
No. 109—Bullock	3	2
No. 110—Charles Ross	3	2
No. 111—Champion	3	2
No. 112—Calef	3	2
No. 113—Coffelt	3	2
No. 114—Cogswell	3	2
No. 115—Cooper Market	3	2
No. 116—Cullasagee	3	2
No. 117—Cunningham	3	2
No. 118—Chenango	3	2
No. 119—Cox's Orange Pippin... ..	3	2
No. 120—Cabashea	3	2
No. 121—Canada Baldwin	3	2
No. 122—Canada Reinette	3	2
No. 123—Clermont	3	2
No. 124—Cockle	3	2
No. 125—Colvert	3	2
No. 126—Clayton	3	2
No. 127—Black Gillyflower	3	2
No. 128—Dutch Mignonne	3	2
No. 129—Danvers	3	2
No. 130—Delicious	3	2
No. 131—Dockham	3	2
No. 132—Dodd's Favorite.....	3	2
No. 133—Domine	3	2
No. 134—Dudley	3	2
No. 135—Dyer	3	2
No. 136—Ensee	3	2
No. 137—Fameuse	3	2
No. 138—Fallwater	3	2
No. 139—Fall Pippin.....	3	2
No. 140—Fillbasket	3	2
No. 141—Flushing	3	2
No. 142—Garfield	3	2
No. 143—Gascoyne's Scarlet	3	2
No. 144—Gilpin	3	2
No. 145—Gravenstein	3	2
No. 146—Grimes Golden.....	3	2
No. 147—Golden Pippin.....	3	2
No. 148—Gano or Black Ben	3	2
No. 149—Gideon	3	2
No. 150—Golden Russett, N.Y. ...	3	2
No. 151—Gloria Mundi	3	2
No. 152—Gilbert	3	2
No. 153—Grindstone	3	2
No. 154—Hubbardstons	3	2
No. 155—Hall	3	2
No. 156—Hoover	3	2
No. 157—Hargrove	3	2
No. 158—Hunt Russett	3	2
No. 159—Huntsman	3	2
No. 160—Hyde King	3	2
No. 161—Ingram	3	2
No. 162—Jonathan	3	2
No. 163—Jacob's Sweet	3	2
No. 164—Jeniton	3	2
No. 165—Jewett Red	3	2

	1st.	2nd
No. 166—King David	\$3	\$2
No. 167—Kinnard	3	2
No. 168—Kelsey	3	2
No. 169—Keswick	3	2
No. 170—Limbertwig	3	2
No. 171—Lake	3	2
No. 172—Lady	3	2
No. 173—Lady Sweet	3	2
No. 174—Lankford	3	2
No. 175—Lawver (Delaware Red) ..	3	2
No. 176—Lehigh	3	2
No. 177—Longfield	3	2
No. 178—Louise	3	2
No. 179—McMahon	3	2
No. 180—Maiden Blush.....	3	2
No. 181—Minkler	3	2
No. 182—Mammoth Greening	3	2
No. 183—Missouri	3	2
No. 184—Magog	3	2
No. 185—Malinda	3	2
No. 186—Milwaukee	3	2
No. 187—Melon	3	2
No. 188—Milam	3	2
No. 189—Mother	3	2
No. 190—Mann	3	2
No. 191—McIntosh	3	2
No. 192—Nero	3	2
No. 193—Newtown Spitzenberg ..	3	2
No. 194—Northern Spy.....	3	2
No. 195—Nonpareil	3	2
No. 196—Northwestern Greening. .	3	2
No. 197—Ontario	3	2
No. 198—Ortley	3	2
No. 199—Orenco	3	2
No. 200—Okabena	3	2
No. 201—Opalescent	3	2
No. 202—Peck	3	2
No. 203—Philip's Sweet	3	2
No. 204—Pryor	3	2
No. 205—Paragon (M. Black Twig) ..	3	2
No. 206—Patten	3	2
No. 207—Peerless	3	2
No. 208—Pewaukee	3	2
No. 209—Pomme Grise	3	2
No. 210—Payne	3	2
No. 211—Queen of the Pippins... ..	3	2
No. 212—Rhode Island Greening. .	3	2
No. 213—Ridge	3	2
No. 214—Rome Beauty	3	2
No. 215—Ribston	3	2
No. 216—Rambo	3	2
No. 217—Red Cheeked Pippin....	3	2
No. 218—Ramsdell	3	2
No. 219—Red Canada	3	2
No. 220—Roman Stem	3	2
No. 221—Roxbury	3	2
No. 222—Spitzenberg (Esopus) ..	3	2
No. 223—Spokane Beauty.....	3	2
No. 224—Senator	3	2
No. 225—Shockley	3	2

	1st.	2nd
* No. 226—Smokehouse	\$3	\$2
No. 227—Stayman Winesap ...	3	2
No. 228—Stephenson	3	2
No. 229—Salome	3	2
No. 230—Stirling	3	2
No. 231—Scott Winter	3	2
No. 232—Seek-no-Further	3	2
No. 233—Swayzie	3	2
No. 234—Swaar	3	2
No. 235—Snow	3	2
No. 236—Stark	3	2
No. 237—Stone	3	2
No. 238—Sutton Beauty	3	2
No. 239—Twenty Ounce	3	2
No. 240—Tompkin's King	3	2
No. 241—Tolman Sweet	3	2
No. 242—Utter	3	2
No. 243—Vandevere	3	2
No. 244—Van Buren	3	2
No. 245—Vanhoy	3	2
No. 246—Vaughan Winter	3	2
No. 247—Virginia Greening.....	3	2
No. 248—Wabash	3	2
No. 249—Waddell	3	2
No. 250—Wadhurst	3	2
No. 251—Walker Yellow	3	2
No. 252—Ward	3	2
No. 253—Warner	3	2
No. 254—Washington Royal.....	3	2
No. 255—Waterman	3	2
No. 256—Wax	3	2
No. 257—Western Spy	3	2
No. 258—Winterstein	3	2
No. 259—White Pippin	3	2
No. 260—Windham Russett.....	3	2
No. 261—Wismer Dessert.....	3	2
No. 262—Winesap	3	2
No. 263—Wagener	3	2
No. 264—Wealthy	3	2
No. 265—Winter Banana.....	3	2
No. 266—White Winter Pearmain	3	2
No. 267—Willow Twig.....	3	2
No. 268—Wine	3	2
No. 269—Whitney (Russett, Can-		
ada)	3	2
No. 270—Walbridge	3	2
No. 271—Windsor	3	2
No. 272—Winter Rose.....	3	2
No. 273—Winter St. Lawrence...	3	2
No. 274—Wolf River	3	2
No. 275—Yellow Bellflower.....	3	2
No. 276—Yellow Newtown	3	2
No. 277—York Imperial	3	2
No. 278—Yates	3	2
No. 279—Zusoff	3	2

Note.—First and second prizes as above will be awarded for any and all varieties deemed worthy of exhibit in this class.

\$460 To Be Awarded in Class 7— Limited Displays.

No. 281—To encourage artistic arrangement in the display of the King of Fruits for exhibit purposes, the management will offer \$460 cash for the best two boxes, two barrels, two baskets, two jars and two plates, as follows: First prize, \$250 cash; second prize, \$125 cash; third prize, \$50; fourth prize, \$25; fifth prize, \$10.

Conditions.

Contest open to individuals, districts, counties, states and provinces. Each exhibit shall contain two boxes, two barrels, two baskets, two jars, and two plates, but no box, barrel, basket, plate or jar may contain more than one variety.

The exhibitor is allowed his own choice of varieties, and may decorate the exhibit as he desires in a space 6 by 12 feet.

This makes possible ten varieties which may be exhibited in this contest. The exhibitor may select one variety or the possible ten, but in no case shall he have more than ten separate packages of apples.

A box in this contest may contain not less than 40 pounds nor more than 60 pounds. A barrel must contain not less than two and a half bushels and not more than three bushels. A basket must contain not less than 25 pounds and not more than 32 pounds. A plate must contain five apples. A jar may be made of any material and any size not to exceed 60 gallons. Either preserved or natural fruit may be exhibited in the jars.

Scoring points—On arrangement and decoration, 60; freedom from blemish, 20; color, 20.

\$495 To Be Awarded in Class 8— The Biggest Apples.

No. 282—To demonstrate the remarkable size to which apples can be grown regardless of commercial value, the management will offer \$300 for the best collection of large apples arranged on a space 6 by 6 feet.

First prize, \$150; second prize, \$75; third prize, \$50; fourth prize, \$25.

Conditions.

The apples may be arranged in any manner desired by the exhibitor on the space mentioned, and awards will be made on the following score: Artistic arrangement, 50 points; size, 25 points; freedom from blemish, 25 points.

Biggest Apple On Earth.

No. 283—As a novelty feature, the management will offer \$185 in medals for the largest single apple, free from blemish, any variety, as follows:

First prize, \$100 solid gold medal; second prize, \$50 solid silver gold-embossed medal; third prize, \$25 solid silver medal; fourth prize, \$10 bronze medal.

No. 284—To cover the entire gamut of appledom, the management will offer a \$10 bronze medal for the greatest freak apple exhibit.

**\$645 To Be Awarded in Class 9—
Pack Awards.**

To encourage the best methods of packing, so essential to the maintenance of a good market for superior quality of fruit, the management offers the following prizes for box packed apples:

No. 285—Best three and one-half tier pack, five boxes: First prize, \$75; second prize, \$37.50; third prize, \$12.50; fourth prize, \$10 bronze medal.

No. 286—Best four-tier pack scored against any other four-tier pack of not less than ten boxes: First prize, \$100; second prize, \$50; third prize, \$25; fourth prize, \$10 bronze medal.

No. 287—Best four and one-half tier pack scored against any other four and one-half tier pack of not less than ten boxes: First prize, \$100; second prize, \$50; third prize, \$25; fourth prize, \$10 bronze medal.

No. 288—Best five boxes commercial varieties, packed five tier, scored against any other five tier. First prize, \$75; second prize, \$37.50; third prize, \$12.50; fourth prize, \$10 bronze medal.

N.B.—Entries in the Ten-box (Class 3) and Five-box (Class 4) may also compete for the prizes in the Pack awards (Class 9), in compliance with the rules governing the awards in Class 9.

Shipping Pack—Special.

No. 289—Best commercial or shipping pack (three and one-half to five tier) single box, any variety: \$25 solid silver medal.

Conditions—The boxes in this contest must be nailed down in shipping condition, and to be opened by the judges.

Scoring points—Color 10, uniformity 10, condition 10, pack 70.

**\$800 To Be Awarded in Class 10—
Special Sweepstakes.**

No. 290—To the winner of the most prizes of all kinds, \$75 gold medal.

No. 291—To the winner of the most first prizes, \$100 gold medal.

No. 292—To the winner of the most first prizes on the single box display, \$25 silver medal.

No. 293—To the winner of the most prizes on the plate display, \$25 silver medal.

No. 294—To the winner of the most first prizes on the plate display, \$25 silver medal.

No. 295—To the winner of the most first prizes in Class 3, \$75 solid gold medal.

No. 296—To the winner of the most first prizes in Class 4, \$50 solid silver gold-embossed medal.

No. 297—To the most artistically arranged competitive exhibit, \$100 solid gold medal.

No. 298—To the exhibitor making the most entries in all classes, \$25 solid silver medal.

The Fruit Magazine Special.

No. 299—To the winner of the most first prizes by any exhibitor in Canada, \$150 solid gold medal.

Three-box or Barrel Sweepstakes.

No. 300—For the best three boxes or one barrel of most perfect apples, for the variety, any variety: First prize, \$75; second, \$50; third, \$25. Note—A National Apple Show diploma will be issued to the winner of second honors in all sweepstakes where no second prize is mentioned.

**\$330 To Be Awarded in Class 11—
Home-made By-Products.**

No. 301—For the best half-gallon jar of unflavored apple butter: First \$10, second \$5.

No. 302—For the best quart jar of preserved apples: First \$10, second \$5.

No. 303—For the best pint jar of apple jelly: First \$10, second \$5.

No. 304—For the best gallon of apple cider: First \$10, second \$5.

No. 305—For the best gallon of cider vinegar: First \$10, second \$5.

No. 306—For the best pint jar of apple marmalade: First \$10, second \$5.

No. 307—For the best half gallon jar of pickled apples: First \$10, second \$5.

No. 308—For the best apple relish: First \$10, second \$5.

No. 309—For the best display of all kinds of apple products, home-made, exclusive of alcoholic beverages; number of varieties, package, flavor and artistic arrangement of exhibit to count in the order named as follows: 30, 10, 10

and 50. First prize, \$100 cash and 50 paeony plants of finest assorted varieties, value \$25, donated by F. W. Menearay, Crescent Nursery Co., Council Bluffs, Iowa—total \$125; second, \$50; third, \$25; fourth, \$10.

**\$260 To Be Awarded in Class 12—
Factory-made Products.**

No. 310—For the best display of all kinds of apple products, factory-made, exclusive of alcoholic beverages, the management will award specially designed gold, silver and bronze medals as premiums. The conditions upon which the awards will be made are: First, that no exhibitor will be allowed to use any product other than his own manufacture; and second, the exhibits will be scored as follows: Number of varieties 30, package 10, flavor 10, artistic arrangement 50. First prize, \$100 solid gold medal; second prize, \$75 solid silver gold-embossed medal; third prize, \$50 gold and silver medal; fourth prize, \$25 silver medal; fifth prize, \$10 bronze medal; sixth prize, National Apple Show Diploma.

\$260—Window Display.

No. 311—To popularize the apple and create a more extensive use of this most wholesome of all fruits, the management of the First Canadian National Apple Show will award handsome solid gold and solid silver medals for the most artistically arranged apple window display in Vancouver during the week of the big Exhibition.

Conditions.

This contest is open to any and all merchants, the only conditions being that the display shall be in position by 10 o'clock Monday morning, October 31, and remain as arranged (with the exception of allowing removal of decaying fruit and replacing same with good fruit) until the close of the show, Saturday, November 5. No restrictions as to varieties, the conditions governing the award being freedom from blemish of apples exhibited and artistic arrangement—50 points each. Notice must be filed in writing with the secretary three days prior to the opening of the show, announcing intention to enter in Window Display Contest, giving name and street address. First Prize, \$100 solid gold medal; second prize, \$75 solid gold medal; third prize, \$50 solid silver gold-embossed medal; fourth prize, \$25 solid silver medal; fifth prize, \$10 bronze medal; sixth prize, National Apple Show Diploma.

\$230 Special Prizes—Class 14.

No. 312—The Charles L. Hanson Special Prize, Victoria, B.C.—500 apple trees, F.O.B. Nursery, value \$100, for the best collection of apples (winter varieties) grown in British Columbia north of the 52nd parallel of north latitude.

**\$50 per Box for Apples from Individual
Prize-winning Trees.**

No. 313—Believing that heredity obtains in plant life as well as in animal life, and that the propagation of pedigree nursery stock should be encouraged, the Yakima-Sunnyside Nursery, Sunnyside, Wash., will give 200 Spitzenberg one-year-old trees propagated from scions taken from a tree which has produced four times as much fruit as any other tree of the variety in the orchard of G. C. McClure, Sunnyside, Wash., as follows: 100 trees to the grower who can report the largest number of boxes of commercial apples taken from a single tree of Winesap in accordance with the age of the tree up to ten years old, crop of 1910; and 100 trees for the best showing made with a Jonathan tree as above. A sample box of the apples must be exhibited as evidence of the quality of the fruit produced. The total value of this prize is \$100. Reports must be in writing, sealed and forwarded to the secretary with entry.

The management will give \$15 cash for second prize in each instance as above.

\$100—New Varieties, Class 15

No. 314—To encourage the propagation of new varieties, the management will offer \$100 for the best five boxes of any new variety not heretofore recognized by the American Pomological Society, as follows: First prize \$75; second prize \$25; third prize National Apple Show Diploma.

\$175—Photographic Display, Class 16.

No. 315—To assist in the exploitation propaganda incident to the holding of the First Canadian National Apple Show, the management will offer \$175 for the best collection of not less than 20 photographs of apple orchards, single trees in bearing, and apple picking and packing scenes of Canada. First prize \$100; second prize \$50; third prize \$25.

Crab Apples—Class 17.

No. 316—The management will pay \$5.00 first prize, and \$3.00 second prize for all varieties of crab apples in single box (regulation size) exhibits; and \$2.00

first and \$1.00 second for plate displays. Twelve specimens to constitute a plate in this class.

RULES AND REGULATIONS

Governing competitive exhibits and concessions at the First Canadian National Apple Show, Vancouver, B. C., October 31 to November 5, 1910.

Interpretation of Rules.

1. The executive of the First Canadian National Apple Show reserves the final and absolute right to interpret these rules and regulations and arbitrarily settle and determine all matters, questions and differences in regard thereto, and also reserves the right to amend or add to these rules.

2. All exhibits for the Canadian National Apple Show may be consigned to the Secretary, but transportation charges must be paid in advance, and in no case will such exhibits be brought into the buildings and placed on exhibit except by order of and at the expense and risk of the exhibitor or his authorized agent. Exhibits should be plainly billed to the exhibitor himself, care "Canadian National Apple Show, Vancouver, B. C."

Admission.

3. The gates will be opened to visitors from 9 a.m. until 11 p.m. each day, and the admission will be:

General Admission	\$.50
Children under 10 years when accompanied by a parent or guardian	Free
Children between the ages of 10 and 15 years .....	.25
Season Tickets (Two admissions daily), non-transferable	2.00
Season Tickets (12 admissions), transferable	5.00
Concessionaire Ticket (unlimited admissions)	2.00
No pass-out checks will be issued.	

Entries.

4. Competition is open to the world.

5. In the event of conflict of general and special rules, the latter will govern.

6. All applications for entries must be made on printed forms, which may be obtained free by addressing the Secretary or calling at his office, 7 Winch Building, Vancouver, B. C.

7. No fee will be charged for entry of or space for competitive exhibits.

8. A proper entry of all exhibits, for premiums or display, must be made with

the Secretary before being placed in the buildings. Special tags showing class numbers for which entries are made will be furnished.

Entries Close.

9. All entries must be filed, in person, by letter, or authorised agent, with the secretary or his assistants. Date for closing of carload entries will be Monday, October 10, 1910. All other entries close Monday, October 24, 1910.

10. All exhibits must be in place by 9 a. m. Monday, October 31, 1910, with entry cards attached, except as otherwise provided for.

11. Entries should be sent in early to insure space and time necessary for the placing of the exhibits.

12. The management reserves the right to determine as to the space which shall be accorded to each exhibit.

13. Exhibits which have been erroneously entered may, at the discretion of the secretary and judge of exhibits, be transferred to their proper divisions previous to the judging. If such classes have been judged they shall not be re-judged.

14. No officer or director of the association, superintendent or assistant superintendent, judge or employe of the show, shall be permitted to enter the competition for premiums in any class.

15. Exhibits may be shipped in care of the secretary (but in no case will such shipment be received or placed on exhibition unless charges are prepaid), who will see to the proper placing of same if so directed in writing.

16. Exhibitors must receive instructions from the superintendent of exhibits relative to the placing of same.

17. The management will in no case provide free transportation of exhibits, or be subject to any expense in their delivery to the buildings.

18. The management will use all diligence to insure the safety of exhibits after their arrival and arrangement, but in no case will it be responsible for any loss or damage that may occur thereto.

Exhibitors.

19. No exhibitor shall be allowed to make more than one entry of each variety in any one class, except in plate exhibits.

20. Space will be allotted to exhibitors and others in the order applications are received.

21. No exhibit shall be allowed to

compete for more than one premium, nor shall it be entered in more than one class, except as specially provided for and announced in the premium list.

22. No exhibit shall be removed before the close of the exhibition without the written permission of the superintendent in charge of the department and countersigned by the manager.

Tools, Machinery, Spray, Etc.

23. Space for the exhibition of tools, spray pumps, machinery or material, boxes, etc., will be accorded up to the capacity of the buildings, not otherwise provided for.

Special Rules.

(Note carefully all General Rules in fore part of list.)

1. All packages **MUST** have a **FULL** address of exhibitor on package or box, also kind or kinds of apples contained therein.

2. Entries for competitive exhibits must be made by the owner (not necessarily the growers, so long as place of origin is given) or in the name of the owner by the person having charge of same (accompanied by a list of varieties of apples) who may receive the premium money, as "agent" for the owner of said exhibit. The Canadian National Apple Show will not be liable beyond the issuance of the warrant on the treasurer for amount of such premium.

3. A plate must contain five apples.

4. A box shall measure 10 x 11 x 12 inches inside, and all box exhibits originating in Canada must conform to this Government standard, but exhibitors from the United States and other countries shall be permitted to use their own standard boxes provided they do not contain less than 2000 cubic inches, inside measurement. A barrel must contain not less than two and one-half bushels and not more than three bushels. A basket must contain not less than 25 pounds, and not more than 32 pounds.

5. Apples when showing signs of decay sufficiently to become unattractive may be removed, and exhibitors should be prepared to replace them with fresh specimens.

6. Entry cards, furnished by the management, specifying the class and number of entry must in all cases be placed with the exhibit to which it appertains.

7. All exhibits competing for the same premium will be arranged together in groups.

8. A list of varieties of apples must accompany all entries.

Advertising on Ground.

9. The promiscuous distribution of handbills, etc., or tacking, posting or painting of advertising matter on the grounds, or any of the property belonging thereto, are strictly prohibited, unless arranged for by contract with the management. Exhibitors may advertise and distribute from their places of exhibit only.

Concessions.

10. Concessions will be let for supplying the necessary wants and providing for the comfort, convenience, pleasure and entertainment of visitors and exhibitors. All applications for space, etc., should be made to the secretary of the Canadian National Apple Show, Vancouver, B. C.

Judges' Rules.

11. Each exhibit shall be judged on its own merits and shall not be credited with points on account of prizes won by same exhibitor in another class.

12. In awarding prizes on all commercial displays, unless otherwise specially provided for, the judges shall exercise their best judgment, but in case of dispute shall be governed by the rules and scoring points of the American Pomological Society.

Rule 2, section 4, of the American Pomological Society regulation entitled, "Examining and Awarding Committees," reads as follows:

Rule 2. In instituting comparisons of values committees are instructed to consider:

First—The values of the varieties for the purpose to which they may be adapted.

Second—The color, size and evenness of the specimens.

Third—Their freedom from the marks of insects and other blemishes.

Fourth—The apparent carefulness in handling and taste displayed in the arrangement of the exhibit. (Pack).

The Judges.

The judging staff includes the ablest and best-known pomologists and fruit-growers on the American continent, and are as follows: Prof. H. E. Van Deman, of Washington, D. C.; Prof. John Craig, of Cornell University; Prof. Wilbur K. Newell, president State Board of Horticulture, Gaston, Ore.; Mr. W. H. Bunting, St. Catharines, Ont.; Mr. Martin Burrell, M.P., Grand Forks, B. C.; and Prof. F. C. Sears, pomologist Mass. Agricultural College, Amherst, Mass.

Instructions to Foreign Exhibitors.

1. To admit apple shipments for exhibition purposes without payment of duty at time of admission, the consignment must be entered for warehouse, upon an official blank form (known as form B18) in duplicate (copies of which will be furnished on application to the Secretary).

2. Give number of packages in such shipments, and total value of same, based on your home or local selling price.

3. Exhibitor must affix his signature to bond on back of form B18, with given name in full (for example, John D. Jones, and not J. D. Jones), as owner or agent for same, as the case may be.

4. Surety will be furnished by the Canadian National Apple Show Management.

5. Bond must be made for full value of consignment as indicated in Rule 2.

6. The National Apple Show Management will give all possible assistance to foreign exhibitors to prevent any inconvenience or annoyance in marking exhibits at the Canadian National Apple Show.

7. A bonded certificate must be obtained from the customs agent at the American ports of entry.

8. The convenient American ports of entry are Sumas on the Northern Pacific Railway, and Blaine on the Great Northern Railway.

9. Shipments can be made via Seattle, and boat to Vancouver.

10. The First Canadian National Apple Show will be held in the Vancouver Horse Show Building, with C. P. R. side-track facilities convenient thereto.

Foreign Exhibits.

11. All or any part of foreign exhibits may be sold upon the payment of the duty and release of bond, prior to the removal of exhibits.

12. The customs duty on apples is 40 cents per barrel; or 12 cents per box.

13. Customs duty is payable in the Long Room Collector of Customs, second floor Post Office Building, corner Granville and Hastings streets, Vancouver, B. C.

14. Express shipments, and less than carload lots must be billed to Vancouver, B. C., to owner or agent, care Secretary Canadian National Apple Show. Express freight and transfer charges must be borne by the exhibitors, as no exhibit space will be allowed until all transportation charges against said exhibit are paid.

How to Ship Exhibits.

Exhibits for the Canadian National Apple Show may be consigned to the secretary, but transportation charges must be paid in advance, and in no case will such exhibits be brought into the buildings and placed on exhibition except by order of and at the expense and risk of the exhibitor or his agent. Exhibits should be plainly billed to the exhibitor himself, care CANADIAN NATIONAL APPLE SHOW, Vancouver, B. C. Printed shipping tags furnished upon application.

SPECIAL NOTICE.

EXHIBITORS SHOULD APPLY AT ONCE TO SECRETARY FOR SHIPPING TAGS, STATING NUMBER REQUIRED. THESE TAGS ARE FURNISHED FREE.

IMPORTANT NOTICES

Please read carefully the premium list, as several additional prizes have been included since former issues, notably in five-box, single-box, plate, new varieties, and a special offer for best showing from a single tree of Winesap and Jonathan. Note that any variety can be entered in the plate display, Class 6.

Complete information and instructions will be found in the rules and regulations. If not thoroughly understood, write to the Secretary. All questions cheerfully answered.

May Polish Apples.

Exhibitors may polish fruit before it is placed on display if they so desire.

As to Exhibitors.

There are no restrictions as to exhibitors; that is to say, apples may be exhibited for competition by any person, provided the name of the district where the apples are grown is designated correctly.

Exhibitors' Tickets.

Any exhibitor having five or more boxes on display at the First Canadian National Apple Show will be honored with a non-transferable season ticket free of charge.

Pomological Convention.

A very important event will be the convention to be held at 10 a. m. on Wednesday, November 2, for the purpose of discussing and recommending amendments to the American Pomological Society rules.



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Vancouver, B. C.

Maxwell Smith, Editor.



PEKIN DUCKS ON A. W. PEASE'S FARM, STRAWBERRYVALE, B. C.

The Fruit Magazine

VOL. II

NOVEMBER, 1910

No. 2

The Fruit Industry in British Columbia

BY HON. RICHARD MCBRIDE, PREMIER OF BRITISH COLUMBIA

THE First Canadian National Apple Show, to be held at Vancouver the first week of the present month, comes at an opportune time, when the fruit industry of British Columbia is receiving such widespread attention.

While all the fruit districts of Canada have made encouraging growth in the last decade, none has made so rapid and substantial a progress as those of British Columbia. While the census of 1901 shows that all the fruit in British Columbia was then grown on about 6,000 acres of land, of which the apple occupied two-thirds, the total area devoted to fruit is to-day probably in the neighborhood of 100,000 acres, though accurate figures are not yet to hand. This industry has created large and prosperous communities throughout the Province, and the great success which has attended the exhibits of fruit in the Prairie Provinces, the East, and the Old Country proves the magnificent quality of the orchard products of British Columbia. Many parts, as in the Okanagan, which were only a few years ago devoted to cattle ranges, and in the Kootenay country, where the land was at one time only thought to be fit for mining, have been devoted to fruit culture with splendid success.

The shipments of fruit for this year will total fully three times those of any previous year.

As an outlet for our fruit, the Prairie Provinces furnish a ready market, which can absorb many times the present supply of fruit. I believe that whereas the value of the fruit was in 1902 not quite \$400,000, this year it is estimated it will amount to the splendid sum of about \$2,000,000, an eloquent proof of the growth of the industry.

The work of those engaged in the industry has received the careful assistance of the Provincial Government, with a view to encouraging it, as far as possible, along right lines. Not only has there been a large expenditure on roads and other transportation facilities, but the Water Act, its enforcement for the protection of the rights of water users in irrigation districts, and the creation and development of the fruit branch of the Department of Agriculture for the technical assistance of fruit-growers in the study of their business, have done much towards advancing the orchard industry.

The Government has seen the need for giving information on all features of this work, and through the Department of Agriculture is giving technical instruction in tree-planting, pruning, spraying, irrigation, fruit-thinning, picking and packing, so that the settler may procure all available information on fruit suited to his particular district. This work will

be extended, as the results so far have proven exceedingly beneficial.

Another feature that the Government is inaugurating is that of establishing demonstration orchards throughout the Province for the purpose of instruction in the best commercial methods of fruit-growing as suited to each particular district.

One most satisfactory feature has been the work of the Board of Horticulture, dealing principally with the inspection of nursery stock and fruit coming into the Province. The magnitude of this work may be noted from the fact that this year some four millions of trees and shrubs will be inspected.

Another feature is the assistance given to our fruit-growers by the requirement of nurserymen doing business in the Province to guarantee that the stock supplied is true to name. I think it cannot

be questioned that the publicity work of the Government, done through the Department of Agriculture, has achieved remarkable results, which may be noted from the success attending the exhibition of fruit, in Great Britain especially, where we have won at the great shows there the highest awards for excellence. This, in addition to the lectures by men experienced in the business, who are able to give exact information, has made a name for British Columbia fruit in the Old Country.

The very satisfactory results so far attained prove conclusively the magnificent future in store for this exceedingly productive branch of industry in British Columbia.

In closing, let me express my congratulations that there is published today in this Province so creditable a publication as *The Fruit Magazine*, exclusively devoted to the fruit industry.

Retrospection

When we danced the minuet
You and I were just turned twenty;
Can you hear the music yet,
Or has time made you forget?
Changing Yuletides lie in plenty
'Twixt us and that minuet.

When we danced the minuet
Life lay golden in the morrow,
All to gayest music set,
Youth and joy were in our debt,
Every promise Hope could borrow
Danced with us the minuet.

Since we danced the minuet
We have learned a way of weeping,
Learned how weary hearts may get;
Youth and Joy have paid their debt
And have stolen from our keeping—
We have danced our minuet!

—Isabel E. Mackay.

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

MOST readers of *The Fruit Magazine* have seen the cabled reports from London respecting the trial shipment of Canadian peaches for the British market by direction of the Dominion Government. The English papers since received contain additional information. Of the consignment to London a specialist, writing to the *London Daily Telegraph*, sums up the verdict of the fruit experts of the world's metropolis in the following terms: "Taking into consideration that the shipment under notice is an early one, the quality of the peaches is quite satisfactory. The variety is the Early Crawford, and most of the specimens are good and juicy. To compare the fruit with the finest grown in English hothouses, as some have done, is not only unfair, but absurd. In the first place, there is a vast difference in price, best English peaches being worth fully 2s 6d (60c) each, whereas the Canadians can be bought for 6d (12c). Ontario shippers have made a good start by sending free-stone fruit, the only kind for which there is a demand in this country. Peaches with stones adhering firmly to the flesh are quite useless on our market. Very soon there will be available the Elberta, which is superior in quality and shape to the Crawford."

Of the shipment by the *Royal Edward* to Bristol the *Western Daily Press*, a leading and influential daily of that city, says: "The consignment of Ontario peaches brought over by the *Royal Edward* had a special interest, as marking the effort to open a new branch of trade. Peaches are as plentiful in Ontario as they are scarce in England, but require careful handling, and under the conditions of travel in former times could scarcely have been expected to reach the British market in satisfactory condition. Of the treatment of fruit in transit much has been learned, and the Ontario peaches, packed with extreme care,

carried over their railway journey on the other side under the most favorable conditions, and conveyed across the Atlantic in the cool chamber of a fast steamship, stood the journey to Bristol well. Sufficient time has not yet elapsed to allow the trade verdict on the fruit to be pronounced. If a tentative opinion be expressed, it is that the peaches were picked a trifle too green, the object, of course, being to allow a greater margin of safety for the contingencies of transit. Experience alone will be a guide as to the exact stage to which the ripening process before picking can safely be carried. Some fruit that had ripened much more on the trees than the rest were described by a Bristol fruit broker as splendid eating."

In a later reference to the peaches the *Press* said: "On Saturday reference was made to the fact that the Ontario peaches brought over on the *Royal Edward* had stood their journey well, and that those which on their arrival were fully ripe were capital eating. It was, however, rather too early then to supply the trade verdict. This, happily, proves to be encouraging to the new venture. The Bristol Fruit Brokers, Ltd., who handled the first experimental consignment to Bristol, ex *Royal Edward*, inform us that 'the fruit arrived in very good condition, and consisted of the variety of peach known as the Early Crawford, being packed in trays of 23 fruits. The out-turn of the first shipment augurs well for future lots, and should induce regular shipments of these, as also of other classes of Canadian choice fruits, which, being marketed within seven days of their being shipped, should arrive in excellent condition and meet a good demand on the English markets.'" The *Press* adds that "in parts of Canada peach-growing is carried on upon a scale enormously greater than that with which we are familiar in Great Britain. On one plantation the peach avenues total over fifty miles in length, and the

number of trees in this ranch is twenty-five thousand. One of the Bristol delegation which recently visited Canada stated that he purchased peaches in the Niagara district at the rate of five for twopence, and this being mentioned to a Bristol expert, his jocular reply suggested that the Bristolian paid a very full price. Indeed, in parts of America peaches are used for feeding pigs. Think of it! A former resident of Bristol who has made his home in Ohio, when spending a short holiday in his native country, was astonished at seeing tomatoes sold by the pound, for in his district they were measured by the bushel. He, too, spoke of peaches finding their way to the pigs. The care which is required in the packing and transit of such easily perishable goods for a long journey by rail and sea makes all the difference in their ultimate value."

A summary of the advices received by the Department of Agriculture respecting the experimental shipment of peaches by the Dairy and Cold Storage Commissioner since September 17 says: "The peaches, which were mostly of the Elberta variety, were procured at St. Catharines, and were packed in single-layer cases, surrounded with wood wool, each case containing only 20 to 25 peaches. The packing was done under the direct supervision of Mr. W. W. Moore, of the Dairy and Cold Storage Commissioner's staff, and according to specification laid down by the Commissioner. The department guaranteed the growers the current local price. The peaches were shipped to Montreal in refrigerator cars, arriving there on the second day after leaving St. Catharines, when they were at once transferred direct to the ship's cold storage chambers, which had been specially reserved by the department for fruit. Small lots were sent to Bristol, Cardiff, Birmingham, Manchester and Leeds, but the bulk of the shipment went to Glasgow, Liverpool and London."

The cargo inspectors employed by the department in Great Britain reported all shipments to have arrived in perfect condition. Mr. W. A. MacKinnon, Trade Commissioner at Birmingham,

cabled: "Maturity right; packing superb." The first consignment was sold at prices varying from 4 shillings to 6 shillings per case. The freight commissions and other charges at the market end will be about 25 cents per case, giving the handsome net return of 70 cents to \$1.20 per case of about 6 pounds of fruit f.o.b. cars at St. Catharines.

The shipments have been undertaken by the department for the purpose of settling a somewhat disputed point as to whether it is possible to land Canadian peaches on the British markets in good condition, and if they will bring a price on that market sufficiently high to pay for the extra care in picking and packing which is necessary.

Some of the shipments to British ports this fall, of the earlier varieties of apples, were unfortunately sent across the ocean under conditions defying the most elemental rules of success in the export apple trade. Mr. J. A. Ruddick, Dairy and Cold Storage Commissioner, referring to these consignments, says: "Several shipments of early apples have been made to Great Britain during the past month. Our inspectors report some shipments in ordinary cars arriving at Montreal in a heated, over-ripe and even rotten condition. In view of the arrangement between the Department of Agriculture and the railways, whereby shippers may obtain iced cars at ordinary rates for the carriage of fruit intended for export in cold storage, it is amazing that such a complaint can be founded on fact. Some of the oldest shippers are the worst offenders in this respect. The direct loss for such neglect or ignorance falls on the shipper or owner, but the indirect loss from injury to the reputation of Canadian apples reaches every apple-grower in Canada, and it is about time that the careless, slipshod operator should be given to understand that he has no right to jeopardize the interests of an important industry in this irresponsible manner."

The Commissioner in the same report says that the Chatham Fruit-growers' Association have equipped their fruit warehouse with cold storage facilities, and will now be prepared to cool all the

early fruit before shipment and to store winter apples for long keeping.

Mr. J. B. Jackson, Canadian Trade Commissioner at Shanghai, China, in his last official report, recurs to the fact first mentioned by him some months ago in his communications to the department, that a promising market for apples exists in China. Canadian shippers, however, have hitherto been handicapped, he says, owing to the lack of cold storage, a want that might easily be supplied if those directly interested cared to take the matter up in serious earnest. British Columbia, of all the provinces of Canada, is the best situated for cultivating this particular trade. Mr. Jackson says: "For apples in boxes in the months of November and December good prices are received." Mr. E. D. Arnaud, Canadian Trade Commissioner at Bristol, England, referring in a recent report to the Department of Trade and Commerce here to this year's shipment of Australian apples to China, says the fruit had to a great extent deteriorated owing to the lack of cooling chambers on the steamers carrying them from Australian to Chinese ports. A representative of a Chinese firm that imported these apples said that on account of the absence of the proper facilities for preserving the fruit in good condition until it reached the consumer, the experiment, so far as they were concerned, had not yet met with the full success that was anticipated. If the steamers could be specially and properly equipped for the work as for the fruit trade to British ports, a big business in apples could be built up in China, for there is a growing demand for apples in that country."

As regards this season's arrivals of Australian apples in London, statements received later than those quoted in my last letter show that the shipments continued to prove remunerative. A report on the subject says "the market proved quite good this year, there being very little competition from Canadian and American apples at the time the consignments reached the British markets. During the month of April alone 85,787 cases of apples, 4,986 cases of pears, and 147 cases of grapes reached London from

Australia; and Liverpool in addition received about 20,000 cases."

Out of more than four hundred samples of packages of fruit purchased for the Dominion Government in all parts of the country this year—438 to be exact—twelve only were condemned, the causes assigned being decay, mouldiness or worminess. These packages were collected in April and May last, and examined and reported on by Mr. A. McGill, chief analyst of the Inland Revenue Department. Mr. McGill observes that the packer is not necessarily to blame for the unfit fruit sold to the consumer. The fruit may be well packed and delivered in good condition to the retailer, but in the hands of the latter suffered to deteriorate.

London reports received here relating to the failure of fruit crops in various parts of the United Kingdom indicate even heavier losses than were anticipated in this correspondence last month, more particularly in apples, pears and plums. The yield of 21 pounds of apples in an orchard of 500 Worcester, Pearmain, and of half a ton of plums in a Suffolk orchard, where eighteen tons were gathered last year, are, of course, extreme cases, but they serve to illustrate the severity of the failure.

That pears have been selling for three times last year's prices shows that some fruit dealers and shippers must be making money in the British fruit markets this season.

"In most cases where the apple trees have been properly looked after," says the last monthly report of the Fruit Division of the Department of Agriculture, speaking of the uneven quality of the apple yield generally in Canada, outside of British Columbia—"a good crop of clean fruit is the result. But good crops of clean fruit have been the exception in a great many apple districts in Eastern and Central Canada this year." I am afraid a good many families in this part of the Dominion will have to do without the usual barrel or two of apples in their cellar the coming winter, unless British Columbia shippers come into the market with considerable supplies, sufficient to make up for the shortage

elsewhere and to keep prices down to reasonable limits. Prices of pretty nearly everything a family needs are now so high, without corresponding increase in earnings, that apples bid fair to become a luxury attainable only by the well-to-do. The contrast presented by British Columbia's prolific leading fruit

crops compared with the uneven results in all the other fruit-growing Provinces is so remarkable that it is doing much east of the Rockies to promote interest in the Pacific provinces among those who have a fancy for going into fruit-raising and are looking around for the best section to locate in.

"Apple Show!"

BY W. B. CROSS

BURNING up with enthusiasm! That's exactly what every man, woman and child in the Okanagan Valley is doing over the world's renowned Canadian National Apple Show.

I had a week among the fruit-growers in the near vicinity of Kelowna and Vernon, and their sole topic was "Apple Show." You talk about hustle! It's dollars to cull apples that nothing in the history of the Dominion has so aroused the even tenor of the farmer as this Apple Show. And take it from me, it's not only the farmer who has been keyed up to concert pitch, but business folk in every walk of life have become keen as to the tremendous possibilities that have been lying for years in peaceful slumber in the great Okanagan Valley.

Just to show what tremendous strides have been made in the way of calling the attention of the outside world to what British Columbia possesses by the publicity given the district through the trumpets of the Apple Show fathers, I will cite an incident:

A Mr. Salino, of New York, was the guest of Mr. J. Fred Sanders, of the Okanagan Cannery, Limited, on a motor trip from Kelowna to Vernon. Mr. Salino represents a two-million-dollar syndicate, and was on a scouting tour for fruit lands. Life myself, he had never been in the Okanagan Valley, and probably never would have known that

such a really great territory existed had it not been for the extensive advertising given the district through the Apple Show. This statement comes unsolicited from Mr. Salino, and for the lack of space I cannot tell of the numerous flattering compliments he paid the surrounding country. I will, however, quote one of his remarks: "This beats anything I have ever seen, and notwithstanding that the company whom I represent have explicit confidence in me, I really believe they will think I am drawing on my imagination when I present the real, cold facts."

With the influx of outside capital, such as is sure to come to the Okanagan Valley, towns of the size of Kelowna and Vernon cannot help doubling their population within the next five years, and that a tremendous boom is on in the fruit-growing industry goes without saying. At the present time Kelowna has but one fruit cannery, but another one (the Okanagan Cannery, Limited) is under way of construction; and considering the business handled this year by the cannery now in action, there is room for a half-dozen more.

To show in what demand the canned products of the Okanagan are the following fact is self explanatory: Mr. Frazer, of the Kelowna Cannery, journeyed to Edmonton looking for a market. He did not have to look long, and one concern alone wanted to contract for thirty-five cars. The capacity of the

cannery would not permit Mr. Frazer to contract for more than five cars. This fact made enterprising business men sit up and take notice.

Kelowna has many wide-awake busi-

ness men, and it is a unit among them that the Apple Show has and is furnishing the greatest amount of advertising and general publicity the Okanagan Valley has ever known.

Important Report

BY MR. W. A. MACKINNON, Canadian Trade Commissioner, Birmingham, England

Experimental Shipment of Peaches

IT may not be out of place to report in some detail on the condition of the trial shipment of peaches which the Department of Agriculture sent to Bristol by the Canadian Northern ss. Royal Edward. This shipment is the first of a series which will be distributed from various points, including Glasgow, Liverpool and London. The present consignment of about 100 single-layer cases, holding 23 peaches each, was divided between Bristol, Cardiff and Birmingham. The fruit was shipped at Montreal on the 15th instant, reached Bristol on Thursday the 22nd, was conveyed to Cardiff by Great Western Railway, to Birmingham by Midland Railway, and placed on the markets of both towns on Friday morning, the 23rd instant. Samples were examined at the two last-named places, where what remains unsold is still under observation.

PACKAGE AND PACKING.

There is not a word to be said by way of suggestion regarding package and packing, since both were entirely admirable. The wood wool is the finest and whitest yet sent from Canada. The packing everyone here considers absolutely perfect.

FRUIT PICKED TOO GREEN.

As regards maturity, the first hasty comments of handlers and receivers were to the effect that the peaches had been picked too green. Even if that were so, it would be a mistake on the right side, but in view of the rapid ripening, the weather here being usually warm for the season, it is likely everyone will now say

that they must have been picked at exactly the right stage of maturity. There is some trifling unevenness in the matter of size, and also of ripeness. As for the former, it should be corrected, for the more even the size, the better show will be made. But a little difference in maturity is helpful, since it allows the retailer time to sell the ripest before the others are quite ready.

BRUISE AND INCIPIENT ROT.

It has been pointed out that bruise and incipient rot should be guarded against. The former is usually understood, and it is gratifying to note that among all the specimens examined here, not one single peach appeared to have a finger or thumb bruise, and very few showed either cut or pressure, such as might be made by the side or angle of basket or box. In fact, the only bruises noticeable were such as appear to have been caused by undue pressure against the twig in the act of pulling off the fruit. Such marks, however, though generally found close to the stem, were not always in line with the hollow where the twig itself had been. It is therefore possible that in some cases at least this bruise had originated by the fruit being set down rather roughly on the stem end. In other cases, however, the injury is rather a break than a bruise, and has evidently been caused in the act of snapping off the fruit in such a way that a fragment of skin has been torn loose for perhaps a quarter of an inch from the point where the stem was detached. The loose flap thus formed could be

distinctly seen in the midst of the rotted portion. It is probably impossible to avoid this injury to some peaches, but they should then be omitted from the shipment.

What is called "incipient rot" may or may not have been discovered when the fruit was shipped; if not, there is, of course, no help for it, but if on minute examination a spot is visible from which decay might be expected to radiate, the peach should be discarded. A case was examined containing ten more or less damaged peaches, and it is reported that the number amounted sometimes to twelve, though on the other hand some cases showed not a single damaged specimen, and the average would apparently not exceed six. These figures apply to Saturday and Monday, the second and fourth days after landing. The decayed spots varied in size from a pin-head to nearly an inch in diameter, but in every case there was clearly discernible a centre or heart from which the trouble had originated and spread. The smallest of these spots were simply marks varying from whitish-yellow to a light-brown color, from which the peach down was missing, so that there was a slight depression. Some receivers describe the trouble as "dry rot," but no one is able to state its cause with certainty. The smaller spots suggest the possibility that a strong sun had reached them through a drop of rain, which formed a temporary burning-glass. Possibly, however, Canadian horticultural experts can indicate exactly the origin of this rot, and point out a remedy, since it would probably make itself evident in similar lots of fruit cold-stored in Canada.

VARIETIES CHIEFLY CRAWFORDS AND FITZGERALDS.

The government shipments appear to have been confined to the early Crawford,* but a private exporter has sent to Birmingham one case of Crawfords and one of Fitzgeralds. The latter variety

seems to have stood the journey much better than the former, assuming that conditions were exactly similar at time of shipment. Only one or two specimens out of the case containing 64 peaches showed signs of damage or rot, while amongst the Crawfords the waste was much more considerable. On the other hand, the Crawfords had preserved much more of their natural flavor, and were on the whole of a better size for sale in the English markets.

PROFITABLE PRICES.

The 23-peach cases were selling in Cardiff at 6s, and the fruit (which was prominently displayed and advertised by showcards calling attention to the fact that they were the first direct shipment of Canadian peaches to Cardiff) sold retail at 6d each, including even damaged specimens. Whether that price could be maintained is questionable, and there is no doubt Canadian shippers ought to be able to make a profit, while allowing the consumer here to purchase at from 3d to 4d per peach.

In Birmingham the price realized at market was 5s per case, and the retail price 4d each. The trade here pointed out that as this fruit is necessarily inferior to the best English hothouse varieties, it cannot compete with the latter as choice dessert fruit, and that consequently it is better to fix the price from the beginning at a reasonable figure which will allow a continuous supply being readily marketed hereafter. These peaches arrive just when the English peaches are disappearing, and should therefore find a ready sale at the price indicated. It is evident, of course, that in any case the question of profit or loss will be decided by the percentage of sound fruit capable of holding firm long enough to admit of disposal in retail stores.

RESULTS SURPRISINGLY GOOD.

It must be admitted that the Crawford is not entirely satisfactory as a long-distance carrier, but as already stated the results of this first important experiment are on the whole surprisingly good.

The Thomson Line ss. Tortona carried a consignment to London from private

*The Department of Agriculture states that Crawford peaches were only shipped in the first lot; the other lots to London, Liverpool and Glasgow, consisted almost entirely of Elbertas, which are a larger and better carrying variety.

shippers, regarding the grading of which there was some criticism. They were said to be "rather small," and were sold for distribution in the provinces at an average price of from 3s 6d to 4s 6d per case. The government consignment for Liverpool, shipped under the direction of Mr. J. A. Ruddick, Dairy and Cold Storage Commissioner, arrived per ss. Megantic on the 24th instant, and are reported as bringing the following prices:

12 cases of 20 peaches each, 4s per case
15 cases (no number marked), 4s per case
21 cases of 23 peaches each, 4s 3d per case

It should be added that some lots from the ss. Royal Edward had to be disposed of at 4s instead of 6s, as obtained at the first sale, which would reduce the average price to something between 4s 6d and 5s.

SUCCESSFUL TRANSPORTATION METHODS

In the matter of carriage, the Thomson Line have sustained the high reputation long enjoyed by them as careful handlers of perishable products. Their ss. Tortona carried the London consignment at the ideal average temperature of 36 degrees.

The newly established Royal Line is to

be congratulated on the entire success achieved with their consignment, the temperature record of the cold storage chamber of the Royal Edward during the voyage being as follows:

Sept. 15th ..	35 degrees	(outside atmosphere 61 degrees)
" 16th ..	35 "	
" 17th ..	35 "	
" 18th ..	35 "	
" 19th ..	35 "	
" 20th ..	35 "	
" 21st ..	37 "	
" 22nd..	49 "	(allowed to rise, outside atmosphere 60 deg.)
" 22nd..	52 "	

GRADUAL REMOVAL FROM LOW TEMPERATURE.

The gradual raising of the temperature is most desirable, and had in this case excellent results. Fruit packages quickly removed from low temperatures to the outside air are often quite damp owing to condensed moisture upon wrappers and packing material. The consignment under consideration was carefully examined and no trace of moisture found, both fruit and wrappers being in perfect condition. It is too early to draw general conclusions, but in this matter of temperatures again it is most gratifying to observe how successful has been this first experiment.

Introduction to Official Report of the Emigration Conference

H. E. EGERTON, in "United Empire"

THE subject of emigration seems in a special degree one upon which the peculiar position of the Royal Colonial Institution enables it to speak with authority. Whenever emigration takes place it can be regarded from a double point of view. There is the individual aspect—the benefit to be conferred upon the man sent out—and there is the more general aspect—the result his arrival will have upon the country to which he is sent. Nor do even these considerations exhaust the subject. There is the further point of view of the interests of the com-

munity from which the man is removed. It is obvious how delicate a matter it may be to adjust these various interests. Assuredly in the infancy of colonization not much was considered except the apparent interests of the Mother Country. The first builders of the Empire proposed to lay the foundations of future greatness with the criminals and the failures of society, not very careful how great a waste of life and effort might be involved by the use of such material. In many cases, no doubt, the good of the individual sent was really regarded, but the main object assuredly was the develop-

ment of potential riches. Space forbids us to enter into the question how far there, in fact, existed in the England of the seventeenth century a surplus population; but in any case it seems pretty clear that the main motives at work were other than philanthropic. But let it not for a moment be imagined that at any time the business of emigration was left to the jail-birds and failures of society. From the first the English love of adventure and of the unknown secured the kind of emigrant who has always been to the fore in the making of Greater Britain. Further, other causes intervened to secure for the new colonies a picked population. Both Virginia and New England owed much to the political and religious dissensions at home, which made those who were dissatisfied with conditions there seek a new field across the Atlantic.

Gibbon Wakefield was doubtless right when he spoke of this as the halcyon time of emigration, when it was resorted to by all sorts and conditions of men, and when the squire and the yeoman and the substantial citizen and the laborer started side by side upon their new life.

Then came the long years of quiet, during which it seems, with regard to some of the colonies, that as many people returned from them to England as resorted thither. There was, of course, some emigration to the newer colonies, and religious discontent at home still brought some settlers to America from the Mother Country; but a great proportion of the emigration into America was of Protestants from the Continent of Europe, followed by Irish from Ulster.

Generally speaking, it is true to say that, whereas the seventeenth century had accepted the dictum of emigration as a safety-valve for surplus population, the eighteenth century regarded it as a dangerous method of draining that population, which was the life-blood of the country. The time at which William Pitt, a statesman brought up in the school of economic orthodoxy, could propose outdoor relief for able-bodied men in proportion to the number of their babies

was not the time when schemes of emigration could rear their head.

Then followed the thunder-clap of Malthus's melancholy law of population, according to which the population of any one country was bound to grow at a far greater ratio than could its means of subsistence. The iron law was more and more accepted by thoughtful men; but could not its menace be averted, or at any rate postponed, if emigration were employed as a check to redundant population? How far this view is consistent with the pushing to its logical conclusion of the Malthusian theory it is unnecessary to consider. Certain it is that the benevolent Malthus himself gave the emigration movement a cautious blessing. With the distress which followed the artificial inflation of the great war no wonder that men's minds again turned to thoughts of emigration. Successive committees of Parliament considered the question, and not a little was done in a practical way; though it must reluctantly be admitted that the action taken was generally in the direction of shovelling out paupers from home, and that much distress to the emigrants and some odium and disgrace to the Mother Country followed from the careless and unscientific way in which the work was carried on.

Meanwhile, to some extent at least, the wells of the national life, so far as the question of emigration was concerned, had been poisoned by the continuance of the system of transportation of convicts to New South Wales. No doubt, from the economic point of view, not a little may be said in favor of this system, but none the less the moral effect must have been bad, as covering with criminal associations the work of Imperial expansion.

It was in revulsion to such ideas that the colonial reformers of the thirties of the nineteenth century found their *raison d'être*. Gibbon Wakefield and his followers preached and practised a more excellent way of emigration, which recalled the great days of early Virginia and Massachusetts. It is unnecessary to deal here with the difficult subject of Gibbon Wakefield's theory as to the

disposal of the public lands; it is enough to note that a partial application of the system gave a substantial revenue, which furnished the means by which a considerable number of persons were emigrated. The memories of men are short-lived, and few now realize that during the middle decades of the nineteenth century the Land and Emigration Commissioners carried on a successful system of State-aided emigration. Between 1840, when the Board was first established, and the end of 1846 thirty-six ships, carrying nearly 6,500 emigrants, were despatched to the Australian colonies. Besides these over 24,400 emigrants were sent out, under the immediate superintendence of the Board, who were introduced by the New South Wales Government under the bounty system. At this time, however, emigration was declining, and that of 1845 reached very low figures. Owing, however, to an improvement in the colonies, the demand for labor soon became great, and between October, 1847, and December, 1851, 146 ships, carrying over 36,750 emigrants, were sent out to New South Wales and Port Phillip, besides 103 ships, carrying over 25,400 persons, to other colonies. In 1852 the gold discoveries led to a great extension of operations. In that year and the five following no fewer than 380 ships, carrying 131,466 emigrants, were sent out to New South Wales and Victoria; while 152 ships, carrying over 44,950, went to other colonies. The existence of this State-aided emigration depended, as has been seen, upon the revenue obtained from the public lands, and, when their public lands became the peculium of the respective colonies, the State-assisted emigration, which had arisen from their disposal, of necessity came to an end. Henceforth it was left to the colonies themselves to direct their own labor supply in their own way.

Considering how small, even with this assistance, was the amount of emigration to British possessions compared with the millions that during the nineteenth century found a new home, under a foreign flag, in the United States, it has often been urged that measures should have been taken to prevent this diversion

of British strength and manhood. But assuredly had such a work been attempted it would have been labor lost unless done on a gigantic scale. There is a period in the lives of communities when they have reached the stage at which they can bear a great influx of population; and that period can only be anticipated by a tremendous expenditure of capital, so as to force development. While emigration was on a small scale, the British colonies, in fact, obtained their fair share in competition with their southern neighbor. But, when emigration grew by leaps and bounds it was inevitable that it should go to a country which had reached a stage of development in which it might be absorbed. The only result of sending numbers to Canada would have been—as, in fact, happened as things were—that they would be equally attracted by the more advanced civilization of the United States; so that the only difference would have been that they would make their journey in two stages instead of one. Only by an enormous outlay on public works, the cost of which would have been well-nigh prohibitive, could the Canada of the first half of the nineteenth century have absorbed a large immigration. In the fulness of time Canada's opportunity was to come; but it would have been a stupendous task to anticipate the future. Towards the end of the nineteenth century the United States had still as many as 72 per cent. of the emigrants that left the United Kingdom, and Canada had only 11 per cent. In 1906 the United States had only 47 per cent. of the total, and Canada had 31 per cent. Considering the difference in the size of the two populations the figures are startling. It appears that in the last few years 95 or 97 per cent. of the total number of people that have emigrated through private or semi-public agencies have gone to Canada or to other British colonies; so that, whatever may have been the case in the nineteenth century, in the twentieth it certainly would seem that the surplus population of the United Kingdom is tending more and more to gravitate towards the British Dominions.

But the question arises whether this is enough in the face of the new conditions that are apparent. Just as we may gladly admit that British industry is far more efficiently conducted than at any former period of its history, and yet recognize that it needs even yet more systematic, scientific guidance in the face of German competition, so we may recognize that factors like the steady, peaceful penetration by Americans of Western Canada require to be taken into consideration when we are discussing the emigration question from an Imperial standpoint.

In many ways the moment is opportune for entering, under new auspices, upon the old question. In the past there was the natural jealousy of the oversea colonists, determined to maintain the standard of wages and of living that might be threatened by an influx of British emigrants; and this attitude, under democratic government, could influence the counsels of Ministries. On the other hand, there was the short-sighted conduct of some British magistrates and individuals, who seemed still to hold the discredited doctrine that the end of an empire is to take the damaged goods of the predominant partner.

Even now the air is still somewhat thick with the smoke of past controversies. The oversea Governments, though they have come to recognize that the question of population for them surpasses all other questions in importance, still have a certain distrust of the emigration societies, and regard them as unwelcome intruders upon their own province. For example, whatever be the merits or demerits of the bonus system in the abstract, it seems a pity that the Canadian Government should have chosen the moment to cease the granting of bonuses to societies like Dr. Barnardo's just when the question of child emigration is being more closely brought to the thoughts and consciences of men. Again, while the importance of securing only desirable emigrants must, of course, be admitted, it by no means follows that a hard-and-fast rule as to the possession of a minimum amount of money on arrival is the best means of securing such a consummation.

Obliged to reckon with the colonial governments, and yet not able to meet them in the open, are the very numerous agencies taking an active part in promoting the work of emigration. Mr. Burns told the Imperial Conference of 1907 that there were nearly a thousand of these, and any State action which should end in drying up this stream of private effort and charity would be nothing less than calamitous. In this state of things, with general recognition around us of the necessity of well-directed emigration, and with equally general recognition of the difficulties which still stand in the way, the Council of the Royal Colonial Institute was assuredly well advised in calling the Conference. But though the interchange of views between persons deeply interested in the subject and possessing great practical experience could not but be useful, the Conference was mainly of importance as setting on foot machinery which in time may have far-reaching results. If we read the discussion regarding emigration at the Imperial Conference of 1907, we are struck, in spite of the eloquence and the enthusiasm of those taking part in it, by the somewhat academic character of the proceedings. Even the practical Conference suffered considerably from the absence of representatives from the offices of the High Commissioners and Agents-General, who could speak with authority regarding the attitude and policy of their respective Governments. A permanent committee on emigration, such as has been agreed upon by the resolutions of the Conference, will be able to approach with confidence the representatives of the various Governments. The Royal Colonial Institute consists to a very great extent of citizens of the various Dominions, and conclusions reached under its auspices will receive a more favorable hearing than if they were the mere outcome of British philanthropists. By these means, by the time of the sitting of next year's Imperial Conference, practical proposals may be before the delegates, which may lead to active measures.

Editorial

NOVEMBER.

OSSIAN was a poet whose gloomy pen was well fitted to write of November—

"Autumn is hard on the mountains: grey mists rest on the hills."

November is often a very cheerless month. Rain, hail and wind chase each other. Gardens are desolate—there is a damp gloom over Nature. But fine days peep out sometimes—and even on bad days the worker on the land can find occupation, even in chill November.

Verstyian tells us that the Anglo-Saxons called this month Wind-Month. They knew, as we know, that blustering Boreas is quite at his best in November. November was also called blood-month because of the abundance of cattle killed for the winter store. The good housewife can make excellent use of the hard days in pantry and preserve closet, and even if bright days are "few and far between," it is cozy indoors with a good fire, and the fruit-grower need never lack occupation. Let him read the literature of his occupation; that is time well spent, particularly if he receives a copy of *The Fruit Magazine* regularly.

* * *

OUR CHRISTMAS NUMBER.

THE December number of *The Fruit Magazine* will be the largest and best we have yet issued. It will contain 100 pages, beautifully illustrated—chiefly with views of the First Canadian National Apple Show; also a complete list of the prize-winners, and many articles of interest to all classes of our readers.

The special feature of the front cover will be another handsome colored cut of a typical specimen of a variety of the King of Fruits, and the Editorial pages will have some lessons drawn from the greatest horticultural event in the history of Canada.

NATURE AND SCIENCE.

BY the time this number of *The Fruit Magazine* leaves the press and makes its modest bow before the footlights of an appreciative public, the gates of the First Canadian National Apple Show will have swung inward, and thousands of visitors to Vancouver will have passed before the long lines of exhibits, great and small, of the King of Fruits, proudly displayed in the splendid buildings placed at the disposal of the management of the great show.

We hope the anticipations of the promoters and the public will be fully realized, and that none will go away disappointed. Even the exhibitors who fail to carry off the coveted cash prizes and medals have an opportunity of profiting through their enterprise and expenditure of time and money in contributing to the success of Canada's first venture in the Apple Show business on a national scale.

There is an educational side to this enterprise, which should not be overlooked either by visitors or exhibitors. Here is a triumph of nature and science which exemplifies the faithfulness of Mother Earth in rewarding the mental and physical energy of man when intelligently applied to unlocking the secrets of Nature's treasure vaults. No visitor to this great show should go away without being enriched by an increased knowledge of the science of producing these splendid specimens of the apple, and their value and importance as a wholesome human food and an article of commerce second to none.

Let the apple-grower learn from these exhibits the varieties having a high commercial value, and which reach the highest degree of perfection in the respective districts from which they are assembled. Let him learn the lesson—so dearly bought by the pioneers—that a few good commercial varieties which succeed in his district are more profitable than

attempting to grow all of the varieties the market demands; that specializing is one of the secrets of success in nearly all lines of business in the present age, and that these exhibits are the result of modern scientific methods of cultivation, followed by honest, careful and skilful grading and packing in bright, clean, tidy commercial packages, to tempt the merchant and consumer to hand over their hard cash in exchange without a murmur.

The merchant should also learn that more profit and pleasanter business relations result from handling high-class goods, and the consumer should recognize the advantage of paying a good price for an honest package of good fruit that is not a disappointment in the culinary department or the dining room of his home. Let the farmer learn that fruit-growing is no longer a secondary consideration, but one of the noblest arts in the science of agriculture; and let the miner, the fisherman, the lumberman, the merchant, the manufacturer, the teacher, preacher, lawyer, doctor, journalist, mariner, politician or statesman bear in mind that agriculture in general, and fruit-growing in particular, are most important industries that make for the highest national development and the moral and physical well-being of the Canadian people.

* * *

SPOKANE'S NATIONAL APPLE SHOW

TWO weeks after Canada's First National Apple Show opens at Vancouver, B. C., the third National Apple Show of the United States will be opened at Spokane, Wash., and it is safe to say that the Canadian show will be greater because of the lessons learned from the two already held at Spokane, and that Spokane's third Apple Show will be greater than it otherwise would have been had the Canadian enterprise never been launched.

Success begets success, and friendly rivalry of the keenest order is the elixir of life to modern commerce. We fully

expect to have at Vancouver, the first week in November, the greatest and best Apple Show ever held anywhere. Should Spokane be successful in winning that honor back a few weeks after we shall be glad to offer our congratulations, and proceed to make Canada's second National greater and better than the first.

The Fruit Magazine wishes both Shows success, and in doing so we recognize that they are amongst the greatest factors ever instituted for the development of the fruit industry and the settlement of vacant lands.

—

Editor, The Fruit Magazine:

I think you will be interested in the following: I believe I have found out a spray (permanganate of potash) which will greatly benefit fruit-growers and farmers.

This spray will cure black-spot canker (apple fire blight). It will not only cure it, but make new bark grow over the wound. Two wounds which I had under observation—one $5\frac{1}{4}$ inches long and $1\frac{1}{4}$ wide, the other a 1-inch circle—were completely healed over with new bark on June 14, and I applied the spray several times between March 7 and that date.

Last summer I applied it to the roots of two peach trees. I also sprayed them, and they grew to be larger than any of the other peach trees in the orchard. One of these trees—a two-year-old—has this year grown from the bud seven main branches, which have made a total of 50 feet of new wood, and it is still growing. Is not this a great growth for a two-year-old tree to make in one season? When the season's growth is finished I will take the exact measurement of this peach tree.

I cured with this spray a tree which had peach leaf-curl; also one with the yellows. As in each case it was only a slight attack, I should like to see this further tested.

I also applied it to a seedling pear tree

which was a foot smaller than its next neighbor in the nursery row, and by the end of the year it was taller and had the loveliest bark I ever saw on a pear tree. I am sure this spray will cure pear fire blight, by the extraordinary effect it has on the bark. The unsprayed seedling pear had a nasty wound on it this spring, which the spray has now cured. I have hardly an apple tree in my orchard which was not affected with the black-spot canker; some of them had lots of wounds this spring. However, strong permanganate of potash applied to the black-spot canker killed the microbe, and now the wounds are being covered with new bark.

I have noticed that American blight (wooly aphis) does not make its home in a wound where permanganate of potash has been applied.

The strength of the solution I used was a teaspoonful of permanganate of potash dissolved in four gallons of water (purple color). This strength is all right for spraying trunk and limbs, but is too strong for leaves and fruit, as it stains them.

For spraying fruit and leaves I used as much permanganate of potash as I could lift on a ten-cent piece, to four gallons of water (ruby color).

If permanganate of potash was mixed with lime and sulphur, would it not be the ideal spray—that is, providing it did not revert?

In pruning large limbs it is advocated to paint the wounds with white lead. I think a better plan is to paint the wounds with a solution of permanganate of potash, as it makes the bark grow more quickly. Being an antiseptic, it keeps the wood in a healthy condition, so that wooly aphis will not attack the wound. It will also make apples larger and more highly colored. I think it toughens the stem—which is a great advantage during a high wind.

Drs. Russell and Hutchison, of Rothamsted Experimental Farm, England,

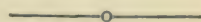
have shown that soils which have been exposed to toluene vapor (an antiseptic) yield about 30 per cent. more crop than the same soils untreated, when both are put to grow plants under identical conditions. One of the Rothamsted soils contained at the outset about 7,000,000 bacteria per gram. After treating with toluene the number fell to 2,600,000; after nine days the number rose to 40,000,000. They then tried various experiments, which showed in all soils so far examined numbers of protozoa and amoeba, which live on bacteria, and kept their numbers down to the comparatively low limit specified.

The treatment with antiseptics kills off all these large organisms, but leaves unhurt some spores of the ammonia-producing bacteria, which are afterwards able to develop to a much greater extent, on account of being freed from their normal check. Now I am of the belief that what toluene vapor has accomplished, permanganate of potash (which is a powerful antiseptic) can do. Of course, one year's experiments are not conclusive, and I wish others would take this up and try it, for the benefit of mankind.

Yours faithfully,

MALCOLM MCCALLUM

Agassiz, B. C.



The "Sportsman's Number" of "Man-to-Man" has just appeared. It is well worth while, and measures up to the standard of the three preceding numbers. It is perfectly edited, beautifully illustrated and carefully made up and printed. "Man-to-Man" is a credit to Vancouver and to British Columbia, and should receive the whole-hearted support of the public. The October number points out the many opportunities offered the sportsman in British Columbia, and deals exhaustively with the subject of big game hunting and game fishing.

Sir Wilfrid Laurier

By Blanche E. Holt Murison

The kingship of true manhood, on his brow
Is written large. Time's hand has failed to trace
Aught but the noblest on his kindly face;—
So well remembered—ne'er revered as now.

His eyes hold quenchless fires that never fade:
With the prophetic vision of the seer,
He dreams his dream, interpreting it clear;
And smiles, where lesser souls would be afraid.

His voice holds music for the multitude;
His silver speech has all the power to sway,
That ever won for him the triumph-way,
Among the disaccord of Party feud.

As leaders must be—oft misunderstood
He went his way, but kept his soul serene;
And through the years his steadfast aim has been,
His country's welfare and her greatest good.

Before the naked gaze of all the world,
The man in him has played a splendid game:
Well has he won the laurels of his fame,
Beneath the flag he never yet has furled.

He viewed the mighty nations of the earth,
And measured issues with unerring skill:
With broad-gauged judgment he pursued his will,
And nourished vital hope to joyous birth.

Truth lit for him a bright propitious star,
Whose light shines round him that all men may see
How Duty can attain a dignity,
That meaner motives have no power to mar.

* * * * *

Not as the leader of a party creed,
Greet we him now from East to farthest West;
But rather as a welcome, honored guest:—
Each heart can offer him no less a meed.

Let factions fade before the larger thought;—
Here is a man, who, for his country's weal
Has striven to achieve his own ideal,
And in the van has ever fairly fought.

For Canada we claim him as our own,
And lift on high the vintage in the bowl;
Pledging the courage of the stronger soul
That fears and faints not, and can stand alone.



RIGHT HON. SIR WILFRID LAURIER, PREMIER OF CANADA

The Genesis of the B. C. Fruit-growers' Association

BY R. E. GOSNELL, VICTORIA

DOUBTLESS a good many of the readers of *The Fruit Magazine* will remember the formation of the B. C. Fruit-growers' Association about 21 years ago. Not more than one or two, I fancy, however, know how it came to be started. As the Editor has asked me to tell the story, I will do so.

In the fall of 1888 I was city editor of *The News-Advertiser* of Vancouver, and one day while at the C. P. R. station during the arrival of the Pacific express—the daily advent of which was then a matter of unusual interest—I espied among the passengers an old and esteemed friend from Ontario, Allan D. McAllan, who was at that time president of the Ontario Fruit-growers' Association. Mr. Allan was a man who had a continental reputation as a pomologist, and was an all-round good horticulturist. Apples, however, were his specialty, and he was regarded as, perhaps, the best authority in America on the subject.

When living in Ontario I took a great deal of interest in fruit-growing, and was a member of the Ontario Association, and in my boyish enthusiasm thought I knew a whole lot about fruit. I would have undertaken to discuss fruit culture with Burbank himself, or to have taken on the management of an experimental farm. I confess now that a great deal of my supposed knowledge was superficial, but my interest in the subject brought me in contact with a great many prominent fruit-growers and fruit experts, chief among whom was Allan D. McAllan, and a more charming man in many respects I have never met. He was a facile talker, and had the faculty of quickly sizing up a situation, and of elucidating a problem in a way I have not since seen equalled. Withal he was not a success in a commercial sense. Had his energies and

his application been commensurate with his intuitions, he would have been a veritable Napoleon in his particular sphere. He was more happy in the philosophical contemplation of the possibilities and problems of fruit-growing than in their demonstration. When I met him in Vancouver he was representing the Manufacturers' Life, whereas he ought to have been about the business for which Providence specially fitted him.

At the time I speak of I had in my mind the desirability of organizing a Fruit-growers' Association, and I immediately "spotted" my friend as the instrument for such a purpose. He was on the way to Victoria, but before he took the steamer I made him promise faithfully that he would not be interviewed by the press until he came back to Vancouver. I not only wanted him all to myself as a "scoop," but I wanted to develop the interview along lines I had in my own mind. One couldn't help forming theories about what was best for British Columbia as soon as he landed in it. The atmosphere is most stimulating in that way. I succeeded even beyond my hopes. I coralled Mr. Allan at the old Dougall House, on Abbott street, and spent most of one Sunday with him. He was the finest subject I ever in my experience encountered. The result was an interview which appeared in five parts on succeeding days, beginning November 20th, 1888. Every phase of fruit-growing and horticulture as they applied to this Coast was discussed, and if I could reproduce that interview readers would agree with me that, given, as it was, 22 years ago, when the industry was in its very infancy, it was in every respect prophetic. It formed the first chapter of the minutes of the B. C. Fruit-growers' Association,



HON. RICHARD McBRIDE, PREMIER OF BRITISH COLUMBIA



BRITISH COLUMBIA FRUIT DISPLAY, TORONTO EXHIBITION, 1910

officially incorporated as part thereof. With the exception of Mr. R. M. Palmer, he had the clearest views of the future and the adaptabilities of the Province in respect to horticulture I have heard expressed. He had a broader vision of our fruit capabilities than Mr. Palmer, although the latter had judgment and the practical bent in a greater degree. For instance, Mr. Allan pointed out the possibilities of a market in Great Britain, which Mr. Palmer later demonstrated so effectually. Back in the seventies—I forget the exact year, as I am writing almost entirely from memory—there was a Colonial and Fisheries Exhibition in London, England. Sir Chas. Tupper was Canadian Commissioner, and Mr. Allan was in charge, at least of the fruit department. It will be interesting to know that even at that date British Columbia made a splendid exhibit of fruit, one that attracted general attention, and Mr. Allan then drew most optimistic conclusions about this Province.

The interview in question, which strongly advocated the formation of a Fruit-growers' Association, excited a great deal of interest, and was favorably discussed editorially in the newspapers. I introduced Mr. Allan to Mr. Cotton, editor of *The News-Advertiser*, who took him up, also his project, quite warmly, and at Mr. Cotton's request I introduced him to Mr. David Oppenheimer, Mayor. Mr. J. M. Browning, C. P. R. land commissioner, and Mr. A. H. B. Macgowan, secretary of the Board of Trade. These gentlemen entered with earnestness into the spirit of the suggestion, and a meeting of the Board of Trade was called to hear Mr. Allan speak and to discuss the project of organization. After that a preliminary meeting, of which I was secretary, was convened, and it was then and there decided upon. Mayor Oppenheimer was the moving spirit of Vancouver of that day—at least he was a leading spirit in all public movements and new enterprises, a man of wide vision, great resourcefulness, untiring industry and energy—and he fell in at once with the idea of a Fruit-growers' Association,

and proceeded, with his usual determination. Mr. J. M. Browning was a man of fewer ideas, but concentrated on them strongly, and as an enthusiastic horticulturist and an old-time president of the Quebec Association, threw all his energies into making the new organization a success. Mr. Cotton backed it up in his paper and his influence privately, while Mr. Macgowan, secretary of the Board of Trade, worked indefatigably in its interests. In fact, a large number of persons heartily supported the movement, with the result that when the first



E. H. WARTMAN, Dominion Fruit Inspector, Montreal beside an apple tree in the garden of Mr. Baylis, Ste. Anne de-Bellevue, Quebec. The tree is one year planted, from Holland, is $\frac{3}{4}$ inch diameter, 30 inches high, and has 4 fine apples on it measuring 10 inches in circumference each.

meeting on February 1st, 1889, was held, the fruit interests of every part of the Province were largely represented. I was asked to take the secretaryship, but the work on a daily paper was too strenuous to admit of it, and Mr. Macgowan was the unanimous choice. Mr. Browning was elected president. The other officers were Thos. Cunningham and G. W. Henry, the latter a nurseryman and fruit-grower at Port Hammond. The



PART OF ONTARIO'S FRUIT DISPLAY, TORONTO EXHIBITION, 1910

whole thing went off with a swing. Mr. Browning and myself were appointed a committee to draft an Act of Parliament incorporating the Association, which, with Mr. Cunningham as parliamentary pilot, duly became law.

One of the very first things undertaken was the holding of a Fruit and Floral Exhibition, which opened in the Van Horne block on Granville street the 7th of August, 1889. Notwithstanding the favor with which the project was received, it dragged for want of indi-

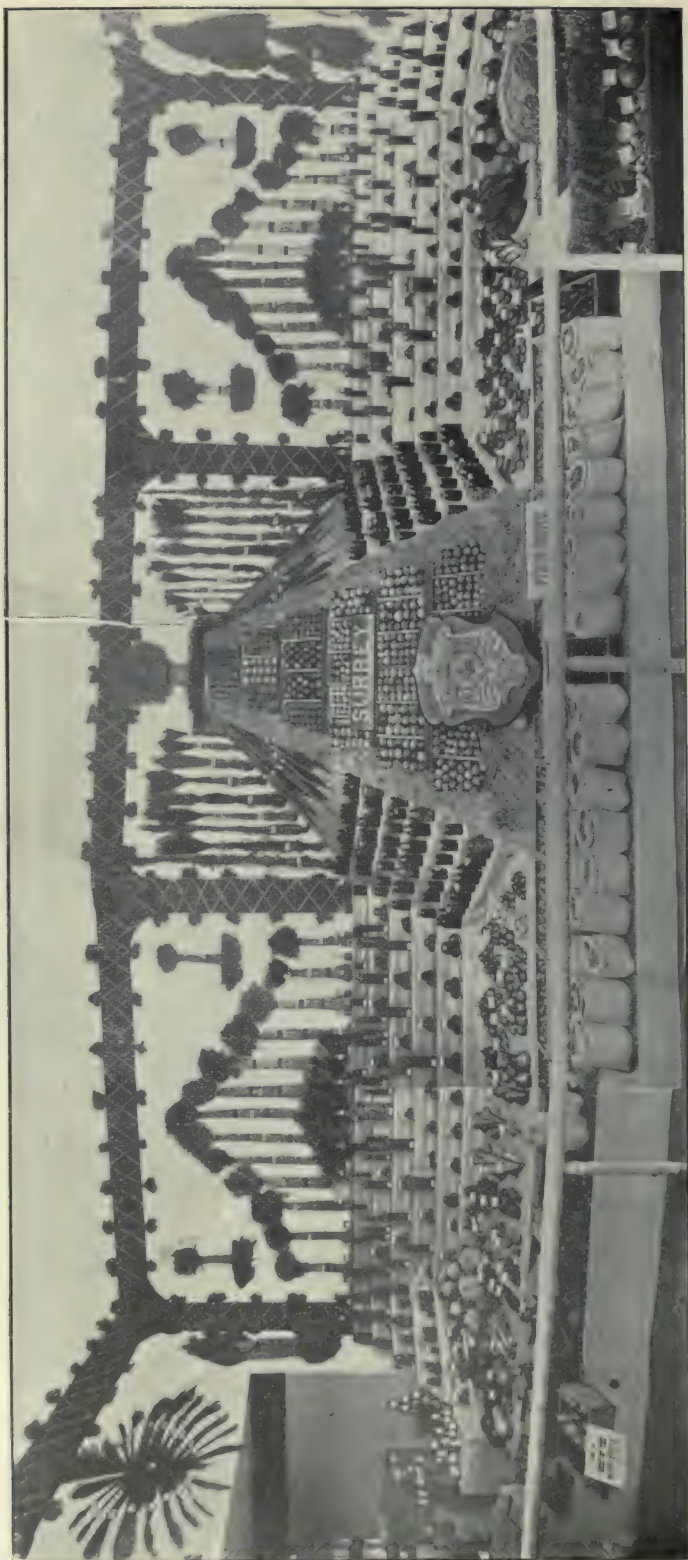
it was the best show of its kind ever held in the Province. We went out to Stanley Park with express carts, got evergreens, ferns, Oregon grape, sal-lal, highbush, huckleberries, and various other shrubbery, and created a very pretty and striking effect in the way of decoration. In my opinion, we overlook the help which Nature affords so abundantly in the way of its rich and varied flora. The Association received a great fillip, and everybody was enthusiastic.



A BEAUTY SPOT—VICTORIA, B. C., EXHIBITION, 1910

vidual effort. Ten days before the exhibition was to open there was scarcely an entry. In desperation Mr. Cotton, at the request of Mr. Browning, gave me two weeks' leave of absence with carte blanche, but no money to spend. The people only wanted stirring up. I never worked harder in my life, and succeeded in emptying every conservatory and greenhouse in Vancouver and several in Victoria and New Westminster. Telegrams went out galore. I had a small but active committee to help me, and if "I do say it myself as shouldn't,"

At the first annual meeting in 1890 there was a very large attendance. The principal business outside of routine was the appointment of a delegate to attend the Ottawa convention of Canadian fruit-growers. I remember it most distinctly on account of my name being placed in nomination, G. W. Henry and several others being my rivals. It was a very spirited fight. I was successful on every ballot, and was declared elected by the chairman, but the point was raised that the successful candidate should receive a majority of all the votes.



FIRST PRIZE DISTRICT EXHIBIT, NEW WESTMINSTER, B. C., EXHIBITION, 1910. WON BY SURREY MUNICIPALITY

cast, and as the opposition combined on Mr. Henry he was elected by a majority of one, I think. The rural members took the ground, and very properly, too, that the Province should be represented by a practical at-work fruit man. The directors subsequently, at the request of Mr. Henry himself, asked me to accompany him to Ottawa as a joint delegate, and, although the C. P. R. offered me a pass and to pay my expenses, I expect I was too much on my dignity to accept. Besides, did not *The World*, "our esteemed contemporary," say that the proposal was ridiculous, and

1891. So far as the newspapers at least were concerned, the Province was well advertised. We also had abundance of the goods to show.

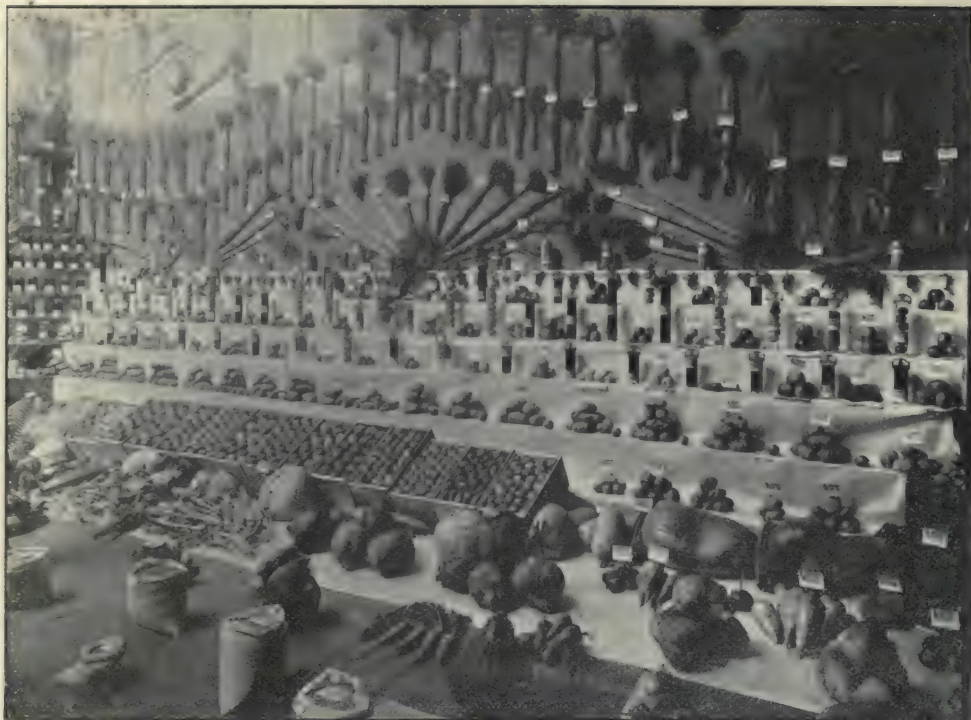
The affairs of the Association progressed apace with increased membership. In 1890 the officers were W. J. Harris (Maple Ridge), O. D. Sweet (Richmond) and A. C. Wells (Chilliwack). In 1891 they were G. W. Henry, E. Hutchason, and E. Latham. The Government contributed \$500 per annum. In 1891 it was announced at the annual meeting that, "in conjunction with R. E. Gosnell, the society had sent



PART OF FRUIT EXHIBIT, VICTORIA, B. C., EXHIBITION, 1910

that there was as much need of my going as there was for a fifth wheel to a coach, and I felt in my innermost heart that *The World*, for once, at least, was right. May I add that after I severed my connection with *The News-Advertiser*, Mr. McLagan, managing editor of *The World*, became one of my warmest friends, and did me many real good turns. However, my failure to go to Ottawa was the lever in the hands of my friends to secure my appointment as exhibit commissioner to represent the Province at the Eastern fall fairs, in which capacity I acted for two years, 1890 and

a series of questions to representative men throughout the Province." This referred to a circular I had prepared, along with Mr. Macgowan, and distributed through the channels of the Association. It brought back a very large number of replies, which were incorporated in a pamphlet I wrote, 12,000 copies of which were distributed at the Eastern fairs, and afterwards published in the report of the Association and in the Board of Trade report. This circular was the basis of the schedule adopted by the Department of Agriculture, just then being organized by the Hon. J. H. Turner—to



MISSION CITY DISPLAY, NEW WESTMINSTER, B. C., 1910

whom the farming interests owe a large debt of gratitude for his efforts in their behalf—and used for years.

One of the features of the early work of the Association was the annual report, which contained, in addition to the record of the proceedings, the papers read, which were full of instruction and suggestion. I had the privilege of contributing my quota in papers, principally relating to the commercial aspect of fruit-growing. One paper, on "Small Holdings and Immigration," I look back to with some pride as incorporating ideas which have had practical illustration in the more modern methods of development, especially in the Okanagan, and as embodied in the Government policy. In this connection the Association owed much to Mr. Macgowan who, though a poorly paid official, did a lot of hard, useful work.

As time went on the management branched out into new channels, on business lines, with a view to co-operative marketing and the establishment of

fruit exchanges. These efforts were not attended with much immediate and direct success. Lack of experience in business methods and too wide a division of responsibility and looseness of management accounted for the partial failure. The pioneer work done, however, was fruitful of good results in the experience gained and the avoidance of mistakes made in the past. The market in the Middle West was permanently opened. In other words, the Association showed the way, though imperfectly, which others followed with success.

The thing happened which often happens in the case of voluntary associations. It got into ruts, and interest waned. The rural members, more directly interested, drew gradually away from city fellowship. This was natural, but not wise, especially when it came to commercial handling of fruit. The town man, though not a practical fruit-grower, is more active and enterprising and has a better knowledge of business methods. His co-operation, as shown

in the affairs of agricultural associations, is stimulating, and his business training helpful in all matters of policy and method. Then, again, the work which the Association started out to do was done by the Board of Horticulture and the farmers' institutes, and its sphere of usefulness without duplicating effort became much narrowed. Just as its usefulness began to be seriously questioned and its influence was at the vanishing point, it was reorganized and galvanized into new life by being constituted a branch of the Department of Agriculture and brought under direct Government control. The change of policy in regard to entire work of the department was decided upon before Captain Tatlow, Minister of Agriculture, and his

deputy, Mr. R. M. Palmer, went out of office, but was carried into splendid effect by their successors in office, Hon. Mr. Bowser and Mr. D. E. Scott respectively. The full explanation of these changes made, which were logical and inevitable for the most effective work, and the reasons therefor, are fully set forth in the last Budget speech, so that I need not go into details. In view of the rapid strides made in the fruit industry and the general and marked advancement of agriculture in this Province, they were eminently wise. Now the Fruit-growers' Association, reconstructed, as it has been, on more modern lines, is in a fair way to fulfil the destiny to accomplish which it was brought into existence.



KELOWNA, B. C., FRUIT DISPLAY AT NEW WESTMINSTER EXHIBITION, 1910



ARMSTRONG, B. C., EXHIBIT AT NEW WESTMINSTER, 1910

A British Columbian in Manitoba

OVER in the Province of Manitoba, and down in the old town of Emerson—the town which in the early days was pictured the Winnipeg to be, but which when half-way up the hill caught the spirit of the antique Abruzzo and watched the racehorse speed of the present capital of that prairie Province, without entering into the race—down in the old town there are beautiful homes and hospitable people: men and women and boys and girls, happy among themselves and giving happiness to more than one traveller or wanderer into the far-flung frontier lands. After months or years of travel, it may be, and has been, the traveller has found himself returning to that home-like and home reception town to enjoy the rest which only home can give. Last night it was my lot to dream again of days gone by and live again a day and night in that Eden of lesser ancient days. There at the old fireside we talked. We? Yes; we were three. One from the South, one from a still more southern land, and one from the West beyond the Rockies, in the beautiful Nicola Valley,

sun bathed so deep that clouds are seldom visitors, and with the air of that kind so light and life-giving that the very Elixir of Life seems found. Of the South and of that farther southern land we talked, and then, with one accord, asked the man from the West about that valley which we had picked out as the retreat of Nature-lovers and the home of prosperous ranchers. The clock on the mantel showed nearly the midnight hour, but the blaze from the grate was big and bright, and on the table were apples from British Columbia and a little cider to cheer. The pitcher tipped again, and with the spring, summer and autumn travels, with him in muse, he told of this valley and how he had ridden his cayuse up and down the main valley and then through the tributary valleys and across the hills, and how the sun seemed to be bigger and shine brighter there than in any other place, and then, with night, the moon and stars were ever bright and clear and the hills and valleys were cool, and thousands and thousands of horses and cattle rested for the early morn; but with the

first peep of day they fed again and wandered over the ranges of their own sweet wills.

He told us of the trip from the Pacific to this rendezvous valley, and how the valley was at the entrance very narrow, but later broadened until beautiful farms growing hay and oats and wheat were found, and then to the right and left were bench lands equally productive, and on beyond in the hills the tributary valleys, the home of the Western cattle men and their herds.

And just there he stopped, and, said he, "Boys, it's beautiful; the whole thing is grand. Why, don't you know, there's a ranch out there in that country—a ranch of 120,000 acres, on which roam some 15,000 cattle and some thousands of horses, to the right and left of the main valley, and in the valley proper thousands of horses and cattle roam, and the ranchers live like kings. Their saddle horses would be the envy of an Arab. It is the land of plenty—hay, oats, wheat and stock. But the whole thing changes in the lower valleys and the valley proper." Pointing to an apple on the table (and, by the way, just helping himself to another drop of cider)—pointing to the apple he said: "Boys, I

can tell you just where that apple grew. It grew at Spences Bridge; but just to be deadsure, I could not say whether in the Widow Smith's orchard or Archie Clews's. Talk about apples, boys! Well, you remember those down East. We thought them pretty good, and they were. But never could they equal those apples. Without a dozen props or more under each tree it is impossible for them to stand up under the loads of apples. In early September I visited those orchards and wondered where they found all the props to hold up the trees. Well, the Widow Smith and Mr. Clews live right at the mouth of the Nicola Valley; and there will be no getting away from it: the apple is going to take a big place in the produce of that valley. Already on a small scale they have been successful. I have seen beauties growing in the Lindley and Woodward ranches. Then at Nicola town the veteran storekeeper, Mr. Carrington, grows some good ones, and several others whose names I cannot recollect; and, by the way, I almost forgot to tell you that one day I cayused around to Mr. Guichon's at Quilchenna, and he told me right off the bat to figure on him sending an exhibit of apples to the great



KAMLOOPS, B. C., DISPLAY AT NEW WESTMINSTER, 1910

Canadian National Apple Show, to be held in Vancouver this autumn. And referring to that just one moment," says Tom, "I had the inside tip before leaving British Columbia that the Apple Show was going to be the very biggest and very best Apple Show the world has ever seen, and, I say, let's go and see it. But, to go back to the Nicola Valley, with its thousands of acres of bottom land and thousands of

acres of bench land now dotted with thousands of horses and cattle. In my vision I see it transformed into apple orchards to rival any in the world. What a beautiful sight it will be; but the cayuse and the saddle and rougher life have been mine, and must be thus on the hills and over the hills and to a new valley. But we shall figure that out on the way to the Big Apple Show."



PART OF SALMON ARM, B. C., EXHIBIT AT NEW WESTMINSTER, 1910

A Beautiful Number

22,000 COPIES

THE December number of *The Fruit Magazine* will be one of great value to advertisers, as 10,000 extra copies will be distributed in Great Britain by the British Columbia Provincial Government, in addition to our regular edition of over 10,000.

Copy for advertisements must be in our hands on or before November 14, in order to insure a place in this splendid

issue, and all orders for extra copies should be in our hands on the same date.

Remember, there is only one *First Canadian National Apple Show*, and our December number will give full particulars, accompanied by numerous handsome engravings, concerning it. Complete bound copies of Vol. 1 are now ready for delivery.

AFFIDAVIT OF CIRCULATION.

I, ARTHUR W. ELLIS, of the City of Vancouver in the Province of British Columbia, Publisher, make oath and say as follows:-

1. I am the Business-Manager for The Fruit Magazine Publishing Company, Limited, Publishers of The Fruit Magazine of the City of Vancouver in the Province of British Columbia and have a knowledge of the matters hereinafter deposed to.

2. The paid circulation of the Fruit Magazine is 10,423 copies monthly.

SWORN before me at the City of
Vancouver in the Province of
British Columbia, this 10th
day of October, A.D. 1910.

W. P. Miller
A Commissioner for taking Affidavits
within British Columbia.

Arthur W. Ellis



LANGLEY MUNICIPALITY EXHIBIT AT NEW WESTMINSTER, B.C., EXHIBITION, 1910



PART OF KEELER'S GREENHOUSES, VANCOUVER, B. C.

Moisture Control in Coast Section

THE years of 1909 and 1910 have demonstrated that under certain conditions, where intensive fruit growing and gardening are carried on, it may pay well to irrigate in the Coast country. In many places cement reservoirs could be made on points of the farm to gather a considerable quantity of rain in the winter season, which might be used to good advantage during July and August, when the temperature favors rapid growth. One good watering, either by the ditch or the sprinkling method, would not only "save" the crop, but in many cases double an average yield. Figure on making use of water,

wherever the intensive method of culture is the practice, and apply, when necessary, at the time to get the most rapid growth. In many cases the engine and pump are a better investment than more acres, or even fertilizers. With a soil which is too dry for bacterial action fertilizers can do but little if any good, unless when applied in the liquid form. The proper amount of moisture present during good growing temperature is necessary to get results from fertility, whether naturally in the soil or applied. Coast farmers will do well to figure more on proper moisture control.—*North-West Horticulturist*.

Pruning Fruit Trees

By PROFESSOR W. S. THORNER

1. **P**RUNE heavily when the tree is young, so as to give it the framework desired.

2. Quit pruning when the tree gets older.

3. Cut off the fruit spurs from the main branches just as soon as they form.

4. Practise summer pruning on the older trees.

5. Do all you can to discourage wood growth.

Do not be afraid of taking the fruit off the tree when you are summer pruning. Prune down until you have a reasonable amount of fruit left, and do not leave too many. Thin after you prune. The pruning is used largely as a thinning.

You can advantageously prune the pear tree during the first summer. Select and cut to the "outer buds" on the branches, so as to throw the framework of the tree outward. Save twelve inches of clean, clear stem. Select a good, strong bud on the inside of the middle limb, and seek constantly to turn the growing branches outward, so as to make an open, strong top through which the sun's rays will penetrate and the air circulate freely.

At the third pruning commence to remove every indication of a fruit spur from the main stem. Keep them off entirely in a circle reaching over half the top of the tree. Prune very hard up to the fourth year and up to the beginning of the growth of the fifth year. From this time on you are to prune for fruit. Do nothing to accelerate a heavy wood growth after the four years of growth. We would change as quickly as the season changes from one system of pruning to the other; that is, change from winter pruning for wood to summer pruning for fruit. We follow this system with pears in order to produce a hard wood which is resistant to pear blight.

After the change from winter to

summer pruning, do just a little pruning during the winter season, cutting out all crossed and diseased branches, but leave most of the pruning for August. This is after the trees are four years old.

In the case of a four-year-old pear tree which has not had the severe cutting back as outlined above, and if it is a well-grown tree, practise summer pruning at the first opportunity. If it is not well grown or properly formed, we would do a little winter pruning to get the branches in desired places. A healthy pear tree can be cut back severely.

In the case of cherry trees you will have a very strong wood growth, straight and upright, a one-year-old tree sometimes reaching five feet in height. Usually it has lots of good, strong buds all the way up. It may have a branch or two. If it is a straight switch, we cut it off 24 to 36 inches from the ground. We want the branches as far apart as possible on account of gumosis. If cherry branches are all together in a case of this kind the load will become too heavy. Cracking and splitting will ensue, and the tree will become subject to gumosis. As the limbs increase in size, they will crowd together, splitting and cracking.

Cut back the cherry tree as severely as you do the pear tree for the first four or five years. With cherry trees you do heavy pruning for wood when the leaves are off the tree, and the last pruning is done in the spring. Injury may happen to your sweet cherries by freezing or thawing, in which case we let them stand until the bud starts in the spring. Then we prune. The essential points are:

1. Prune heavily while the cherry tree is young.

2. Get good, strong, active growth.

3. When the trees are three or four years old, change to summer pruning almost the same as you do with the pear.

4. Instead of pruning just before the

crop is harvested, prune to correspond to the time just after it is harvested.

The Bing cherry, if given half a chance, will hold its leaves late in the fall, until the first heavy frosts. The cambium layer of wood is in this way killed. In the spring such a tree will start out just as usual, and will then die. Do not permit the tree to grow too late, but harden it up so it will lose its leaves early in the fall. Irrigating too late in the fall may produce this trouble.

In setting out peach orchards we prefer June buds, though the use of yearling trees is not discouraged entirely. Cut the June bud from 12 to 15 inches of the ground. Prune it severely. The yearling trees may be 12 to 15 inches, or even two feet. Cut them back severely. On rich soil a growth of three to five feet will take place the first season. Three

to five branches are all that is necessary in the framework of a peach tree, though five to seven are used in other trees. Treat sour cherries the same way, using a little bit longer stem. The sour cherry will not get high anyway. Prune very much the same as you do for apples, leaving them a little longer than the apples. Frequently we leave these 18 to 24 inches in length. We pay very little attention to the small branches that appear. Just let them stay as they are. Suppose you are planting a one-year-old peach tree, and it has a lot of branches on it. You may treat them in two ways: (1) Cut these off close to the stem, not injuring the little bud on each side of the stem, of course; or (2) strip them off two inches in length. Either way will give satisfactory returns. Then get the large branches headed back. Do not "shear" the tree. Prune it.

Dead

Breathes there the man, with soul so dead,
 Who never to himself hath said:
 "My trade of late is getting bad,
 I'll try another eight-inch ad."
 If such there be, go mark him well;
 For him no bank account shall swell,
 No angels watch the golden stair
 To welcome home the millionaire,
 The man who never asks for trade
 By local line or ad. displayed,
 Cares more for rest than worldly gain,
 And patronage but gives him pain.
 Tread lightly, friends; let no rude sound
 Disturb his solitude profound,
 Here let him live in calm repose,
 Unsought except by men he owes,
 And when he dies, go plant him deep,
 That naught may break his dreamless sleep;
 Where no rude clamor may dispel
 The quiet that he loved so well.
 And when the world may know its loss,
 Place on his grave a wreath of moss,
 And on a stone above, "Here lies
 A chump who wouldn't advertise."

—Selected.

English Walnut Culture

THE English walnut, like other kinds of plant life, thrives best where all the conditions are favorable. Not every kind of soil and climate is suitable for the growing of walnuts.

The walnut requires a deep, rich loam, or even adobe soil, free from hardpan or standing water within reach of the roots; on the other hand, it will not flourish on the mesa without water, although it might continue to linger along on the winter rains for many years.

On rich, heavy soil the trees should be planted 45 or 50 feet apart, but on lighter soil they may be thinned out for a permanent stand. Sometimes, however, they are planted closer in quincunx form, with the idea of taking out the intervening trees as soon as they become crowded, and leaving the permanent ones 50 feet apart. The nursery stock may be one, two or three years old when transplanted to the orchard, but the yearlings will soon catch up to the others, and will be less liable to have unsound or defective roots. The price of good seedlings generally ranges from 10c to 30c apiece, while that of grafted stock ranges from 50c to \$1.25, or at the rate of 10c per foot in height.

While the grafted stock makes a less hardy tree and is a lighter bearer, it is generally preferred because the tree comes into bearing earlier and the nuts are larger and bring from 1c to 2c a pound more than the seedlings in the market. The young tree should not be allowed to grow naturally, care being taken to form the head not less than 5½ feet from the ground. By this treatment the tree will grow larger and more symmetrical, and will require no cutting away of large branches to get the head up, and will need less pruning generally to keep it in proper shape. The transplanting should always be done while the tree is dormant and when the weather conditions are favorable. The tree should have good roots, which should be kept from drying out in the

change, and should be spread apart in the hole; but care should be taken not to set such tree much deeper, if any, than it grew before. After the dirt is filled in it should be settled around the roots with water applied bountifully either with a bucket or from an irrigating ditch.

One plowing a year is sufficient, unless the ground becomes packed afterwards by heavy rains or irrigation, in which case it may be loosened up with the plow or cultivator—whichever will accomplish the work best—provided there is no vegetation turned under by the first plowing to interfere with the second. During the late spring or early summer the soil should be loosened up to a depth of five or six inches and cultivated until a fine mulch is formed to that depth. This may be done with any implement that will accomplish the work; a spring-toothed cultivator or a disc harrow is as good as anything. Neither the plowing nor the cultivating should be done when the soil is wet enough to pack like moulded brick; but when it has become sufficiently dry to be friable, and before it has had time to bake, it should be broken up and pulverized as above indicated. When thus pulverized the soil will retain the moisture, and, with an occasional surface cultivation or harrowing to prevent pores for the escape of moisture being formed, will carry the trees through the summer in good condition.

The quantity of water to be used in irrigating the trees, the number of times to be applied during the year, and the best time of year to make the application, are questions that every irrigator will have to determine for himself by experience and observation. There is more or less variation in the seasons and different kinds of soil require different kinds of treatment. As a general rule no more irrigation, either in quantity of water or in times of application, should be done than is necessary to keep the trees in a thrifty condition. Much

more than enough would increase the expense unnecessarily and injure the trees and soil. Extremes of wet and dry should be avoided, so as to keep the dampness of the soil as nearly uniform as possible. On good walnut land one or two irrigations will be sufficient, and the second one should be omitted if it is not needed. Probably late spring or early summer, before the orchard is laid by for the season, is the best time to irrigate walnuts. Late summer irrigation should be avoided, unless absolutely necessary to keep the trees from suffering.

Like transplanting, pruning should be done while the trees are dormant. Owing to the flexible character of the wood and length and weight of lateral branches, especially when loaded with nuts, the tendency of the lower limbs is to droop and get in the way. By pruning off all the shoots that point downward the head can be worked up without having to cut off many large limbs. When a lower branch pushes far out from the body of the tree and begins to hang down, it should be topped back just outside of some vertical shoot; that will check the growth, lighten the weight, and turn the limb in an upward direction. In pruning always cut back of the rim or wrinkled bark; then the cut will begin to heal over as soon as the tree comes out in leaf. If, however, the cut is made outside the rim, it will never heal over until the wood decays back to the rim, and may then leave a hole in the limb or tree, which will be slow to grow over if it does not continue to decay into the heart of the limb or tree. Care should be taken in pruning to keep the tree well balanced and braced up against the coast breeze. Little compunction should be felt about cutting off the lower limbs, where actually necessary to balance the tree or get them out of the way, since their loss to the tree will force out and distribute the nuts more evenly over the higher branches. Then, too, the nuts on the lower limbs are more subject to the blight than those higher up; hence their removal will entail little, if any, loss.

The walnuts in Europe are afflicted with the same blight or black spot that we have here. The disease seems to be intermittent, prevailing with more or less severity for a series of years, then remaining inactive for a like period, and thus continuing to alternate between activity and inactivity. Observation here shows that damp, foggy weather aggravates or encourages the disease. The most favorable weather for walnuts is a dry, cool, breezy atmosphere, under which the blight will dry up and disappear. Experiments are being made in grafting with or upon resistant stock, and J. B. Neff, of Anaheim, thinks he has succeeded in checking the disease in that way.

Budded or grafted trees begin to bear when they are three or four years old; whereas seedlings must be seven or eight years old before they begin to bear. The amount of the crop increases with the age of the trees. In harvesting the crop the nuts should not be knocked from the trees until the hull is well opened up; otherwise they will be harder to hull and the nuts will be much darker in appearance. Trays that will hold about two sacks of nuts—say three feet by six feet and six inches deep—are almost indispensable in handling the nuts; trays expose the nuts more evenly to the sun, keep them off the ground at all times, and protect them in bad weather by being piled and covered. Unless the nuts are very green, little sun will be needed to dry the moisture from the surface; and, when this is done, the trays should be piled and the nuts allowed to dry in the shade, where they will cure more evenly and be less liable to crack. Nuts should not be permitted to lie long on the ground at any time; but in case of rain, which sometimes occurs before the crop is fully harvested, the nuts should be picked up from the ground as soon as possible, washed off and rinsed clean, put upon trays and dried like the others. After the nuts are sufficiently cured they should be sacked and taken to the packing house for bleaching and the market. —G. T. Shafer, in *Orange Post*.

The Fruit Crop Condition

As Seen by the Secretary of the British Columbia
Fruit-growers' Association

Victoria, B. C., Oct. 3rd, 1910.

R. M. Palmer, Esq.,
President B. C. F. G. A.,
Kamloops.

Dear Sir,—On apple crop conditions to date I beg to report as follows:

In ONTARIO the situation is reported from reliable sources as being unchanged in fall and winter apples. The crop is very much below average in quantity, and as to quality, only about 20 per cent. of it is reported as being good; the remainder very poor. In Ontario prices of stock have been rising steadily, and growers who have held off until now before selling are realizing prices around \$3.00 to \$3.50 per bbl. for No. 1 apples at the track. Spy and McIntosh are reported going from \$3.50 to \$4.00 for No. 1 stock at the track. No. 2, \$3.00 to \$3.50. The crop of McIntosh is short, as well as ordinary winter varieties. In Nova Scotia there is one-third crop, of poor quality.

EASTERN UNITED STATES.—The U.S. Department reports slight improvement in New York and New England States as to condition, and fruit is undoubtedly of high quality in those States. Produce papers state that in New York, West Virginia, etc., "apple buyers going crazy," and state that buyers who refused to touch the crop a month ago at \$2.50 at the track are now buying heavily at \$3.00 to \$3.25. This despite the fact that general conditions certainly do not warrant such high prices for these apples. Growers are selling out almost entirely, few apples being stored. Export prices are excellent at present, being reported around \$5.50 to \$6.50 in England for barrelled fruit, with very strong demand, and this has a great influence in causing this heavy buying movement. Buyers from the Middle

West are also in the Eastern States in full force, at present going a little shy on Western boxed apples. In West Virginia, York Imperial are selling at \$2.75 at the track.

The English market is very strong, with prospects that it will continue so. The Hood River Gravensteins mentioned in last report bought at Hood River for \$1.50, sold in England at \$3.00 to \$3.25, netting the buyer 50c to 75c fair profit. Salem Gravensteins \$1.00 f.o.b., also brought \$3.00 in England.

WESTERN STATES.—Here the situation has improved slightly over last month. At every point prices have advanced somewhat, though sales are not taking place freely, as in the East. Undoubtedly Middle West buyers are endeavoring to procure their high quality fruit from the barrel States sections rather than from the Western boxed States. Prices generally have advanced 10c to 15c a box, and sales are reported of "choice" Yakima Jonathans, 4½ tier, \$1.25; Fancy Winesap, \$1.50; and Fancy Rome Beauty, \$1.35. On the whole, sales to distributing houses so far have not been large compared with the crop. Mr. E. H. Shepard, of Hood River, wires me: "Satisfied your previous estimates too high. We are selling fast, which indicates pretty good condition. Situation is improving. Mixed cars early fall varieties bringing fair money, with orders in for more than we can supply."

On the whole, while there may be some opportunity to take advantage of speculative rises, shippers will do well in their regular trade to urge sales at prices made as already indicated rather than trust to speculation and a later rise.

Respectfully submitted,

R. M. WINSLOW,
Secretary.

Boxes versus Barrels

THERE are so many apple-growers and dealers in Eastern Canada who are slow to recognize the advantages of modernizing their methods, putting up their fruit in convenient and attractive packages, and thereby increasing their profits, that the following extract from a letter received by the management of the First Canadian National Apple Show from Mr. A. Chalmers, Jr., who is at present in Canada in the interests of his firm, Messrs. Andrew Chalmers, of Albion street, Glasgow, Scotland, and Las Palmas, Grand Canary, should be read with interest. Mr. Chalmers says in part:

"I am pleased to know you are having an Apple Show, and do truly wish I could see my way to represent my house. But, you know, we are busy here, and one could hardly leave this

district in October, as we are operating extensively in Ontario and New York State this year.

"Apples from the Pacific have a great reputation in the Old Country, the quality being good, and the fruit honestly packed in boxes.

"The more boxes of apples shipped across the Atlantic, the greater will become the consumption. Retailers of fruit and private buyers alike are tired of buying apples in barrels and being deceived with dishonest packing and poor grading.

"There is a great future for British Columbian apples in the old land, and I trust your growers will become shippers, and take advantage of our markets.

"We sell by private sale, and will be pleased to correspond with any of your exhibitors."

The Tour of a Smile

My Papa smiled this morning when
He came downstairs, you see,
At Mamma; and when he smiled, then
She turned and smiled at me;
And when she smiled at me I went
And smiled at Mary Ann
Out in the kitchen, and she lent
It to the hired man.

So then he smiled at someone who
He saw when going by,
Who also smiled and ere he knew
Had twinkles in his eye;
So he went to his office then
And smiled right at his clerk,
Who put some more ink on his pen
And smiled back from his work.

So when his clerk went home he smiled
Right at his wife, and she
Smiled over at their little child
As happy as could be;

And then their little child, she took
The smile to school, and when
She smiled at Teacher from her book
Teacher smiled back again.

And then the teacher passed on one
To little James McBride,
Who couldn't get his lessons done
No matter how he tried;
And Jamesy took it home and told
How Teacher smiled at him
When he was tired, and didn't scold,
But said, "Don't worry, Jim!"

And when I happened to be there
That very night to play
His mother had a smile to spare
Which came across my way;
And then I took it after 'while
Back home, and Mamma said:
"Here is that very self-same smile
Come back with us to bed!"

Soil Cultivation

THE general object of all soil cultivation is to make favorable conditions for the growth of desirable plants. In relation to the soil, proper conditions of moisture, heat and air must be present. We cultivate the soil for the following purposes: (a) To open up the soil: Plant roots must be able to push their way through the soil and get food from a large area for the best development. (b) To conserve moisture: Soil moisture, of use in plant growth, exists around the soil particles and moves from the wet to the dry place. To prevent unnecessary evaporation and loss we must cultivate as early as possible in the spring, as soon as possible after rain, immediately behind the plow in spring plowing, and as soon as the soil is dry enough after irrigation. (c) To raise the soil temperature: The warmer the soil at planting time in the spring, the more rapid the germination and growth. By stopping evaporation early spring cultivation raises the soil temperature. To admit air: Plant roots and soil organisms require air for best development and activity. To destroy weeds: Weeds are soil robbers. Cultivate them out when they are small and thus prevent their seeding.

W. H. Underwood, writing in *The Epitomist*, states that the controlling of moisture is one of the most important questions in the whole range of agricultural practice. Whether a man farms in arid, semi-arid, or humid sections, he must have a cistern with a lid on it all over his farm; that is to say, he must so manage his soil that it will receive and store that rainfall, and in a dry time part with as little of it as possible, except that which directly passes through the plant. The supply may be in excess, and hence the necessity for drainage; or it may be deficient, and hence the necessity for a mulch of dry dirt. This is the lid that keeps the water in the cistern, except as pumped out through the leaves of the plants, leaving the substance in the plant.

Man has little to do with the heat. That comes as a gift from the hand of the Divine, and in such proportion as He sees fit. The farmer is responsible for the proper utilization of it; for example, in so cultivating his soil and planting his seeds that they may germinate with the minimum amount after the normal season has come. He may plant a type of grain, as, for example, late-growing corn, the demands of which are in excess of the seasonable supply of heat, and hence it becomes frost-bitten. Or he may plant a very small type of corn which cannot utilize the heat of a normal season, and therefore allows it to go to waste. Or by keeping up a sufficient supply of humus he can store more heat than could be done by the soil of an exhausted farm.

Light also comes as a gift from above. All the farmer is responsible for is the use of it. He may, for example, undertake to grow clovers with such a heavy nurse crop that the light which is so essential to these tender plants may be excluded by the broad leaves and dense foliage of the nurse crop; and hence they perish like a lamb or pig born during a damp, muggy, cloudy period in April, which dies before it receives the kiss of the sun. He may undertake to grow grasses or grains in a forest which shuts out the sunlight.

Another essential is air, from which we cannot escape and live. What has the farmer to do with air? Not much in one sense, and yet a good deal. If he allows his soil to become waterlogged for lack of drainage the air is necessarily excluded, and nothing but coarse-growing plants of little value can thrive in it. It is not enough that the air presses its weight upon the soil. The soil itself must have air, and has more or less, no matter how one may farm; but when a man allows a crust to form upon his cultivated soil he excludes to a greater or less extent the air, which is quite as essential to the development of the root system of plants as it is to the life of the leaves.

Injurious Insects

WITH REMEDIES AND PREVENTIVES

BY PROFESSOR L. H. BAILEY

(Continued from Page 41, October issue of "The Fruit Magazine")

GRAPE Vine Flea-Beetle (*Grap-toderia chalybea*, Illig.).—Beetle, of a blue metallic color, about one-fourth inch long, feeding upon the buds and tender shoots in early spring.

Remedies.—Arsenites. The beetle can be caught by jarring on cold mornings.

Grape-Vine Root-Borer (*Sciapteron polistiformis*, Harris).—Larva, one and one-half inch or less long, working in the roots.

Preventive.—Mounding as for the peach-tree borer.

Remedy.—Dig out the borers. Apply scalding water to the roots.

Grape-Vine Sphinx (*Ampelophaga Myron*, Cramer).—A large larva, two inches long when mature, green with yellow spots and stripes, bearing a horn at the posterior extremity, feeding upon the leaves, and nipping off the young clusters of grapes; two broods.

Remedies.—Hand-picking. Arsenites, early in the season.

There are other large sphinx caterpillars which feed upon the foliage of the vine, and which are readily kept in check by hand-picking and spraying.

Phylloxera (*Phylloxera vastatrix*, Planchon).—A minute insect preying upon the roots, and in one form causing galls upon the leaves.

Preventive.—As a rule this insect is not destructive to American species of vines. Grafting upon resistant stocks is the most reliable method of dealing with the insect yet known. This precaution is taken to a large extent in European countries, as the European vine is particularly subject to attack.

Remedies.—There is no reliable and widely practicable remedy known. Burn affected leaves. Bisulphide of carbon poured in holes in the ground, which are quickly filled, is very effective. Carbolic acid and water used in the same way is also recommended. Flood the vineyard.

Root-Borer.—See GRAPE-VINE FIDIA.

Rose-Beetle.—See under ROSE.

Snowy Cricket.—See under RASPBERRY.

Thrip or Leaf-Hopper (*Erythroneura vitis*, Harris).—In various stages, one-tenth inch or less long; feeding on leaves, causing them to appear scorched.

Remedies.—Sticky fly-paper secured to a stick and carried over the vines, while another person scares up the insects. Attract to lights at night. Kerosene emulsion. In houses, tobacco-smoke, pyrethrum poured upon coals held under the vines, syringing with tobacco-water or soapsuds. Fumigation in the field should be done before the insects develop wings—late in July or in early August (in the north). Rake ground clean about vines late in fall in order to expose insects to the weather. It has been found in California that thrips can be greatly lessened by feeding off the leaves with sheep, soon after the grapes are picked.

GRASSHOPPERS.—If these pests become serious, they may be kept in check by the following means: Place a tablespoonful of poisonous bait by the side of each tree or vine. The bait is made of 40 pounds bran, 15 pounds middlings, 2 gallons syrup, 20 pounds arsenic; mix with soft

water. Costs 25 to 75 cents per acre for orchards. Or Paris green spray may be used where there is no danger of poisoning fruit or grain.

GREEN-FLY.—See APHIDES.

HOLLYHOCK. Bug (*Orthotylus delicatus*, Uhl.).—A small green bug, attacking the hollyhock with great damage.

Remedies.—Kerosene emulsion. Pyrethro-kerosene emulsion.

HOUSE-PLANTS.—See APHIDES, MEALY-BUG, MITES, and RED SPIDER.

LAWNS. Ants (*Formica* sp.).—Insects burrowing in the ground, forming "ant-hills."

Remedy.—A tablespoonful of bisulphide of carbon poured into holes six inches deep and a foot apart, the holes being immediately filled up.

LEAF-CRUMPLER (*Phycis indignella*, Zeller).—Larva, brown, wrinkled, found on leaves of various kinds, which it brings together in masses and attaches them to each other and to the twigs by means of silken threads. The next season young worms appear from the mass and feed on the new crop of leaves.

Remedy.—Gather the masses and burn them. Arsenites before the larvæ cover themselves up.

LETTUCE. Aphis or Green-Fly. — A plant-louse on forced lettuce.

Preventive.—Tobacco-dust applied on the soil and plants as soon as the aphid makes its appearance, or even before. Renew every two or three weeks if necessary. Fumigating with tobacco is the surest remedy.

Green Lettuce-Worm (*Plusia Brassiae*, Riley).—Larva, somewhat over an inch long, pale green, with stripes of a lighter color, feeding upon leaves of many plants, as cabbage, celery, and endive.

Remedies. — Pyrethrum diluted with not more than three times its bulk of flour. Kerosene emulsion. Hot water.

LICE.—See APHIDES.

MAY-BEETLE or MAY-BUG (*Lachnosterna fusca*, Frohl.).—A large and familiar brown beetle, feeding upon

the leaves of many kinds of trees. The common white grub is the larval state. It often does great damage to sod and to strawberries.

Remedies.—For beetle, use arsenites, or jar them early in the morning. For grubs, plough up the lawn so as to expose them to field-birds and poultry, or turn in hogs. Avoid planting strawberries on grubby land. The grubs are often worst upon land which has laid in sod, or which has been heavily treated with stable manure.

MEALY-BUG (*Dactylopius adonidum*, Linn.).—A white scale-like insect attacking greenhouse plants.

Remedies.—Alcoholic decoction of pyrethrum. Whale-oil soap. Carbolic acid and soap. Removing insects with brush on tender plants. Whiskey, applied with a brush. Fish-brine. House-plants may be washed in soapsuds. The best procedure in greenhouses is to knock them off with the hose. A small, hard stream of water upsets their domestic affairs.

MELON. Melon-Worm (*Eudiophtis hyalinata*, Linn.).—Larva, some over an inch long, yellowish green and slightly hairy, feeding on melon-leaves, and eating holes into melons, cucumbers, and squashes; two or more broods.

Remedies.—Hellebore. Arsenites early in the season.

Spotted Cucumber-Beetle.—See under CUCUMBER.

Striped Cucumber-Beetle.—See under CUCUMBER.

Squash-Vine Root-Borer.—See under SQUASH.

MITE (*Tetranychus bimaculatus*, Harvey).—Much like red spider in size and shape, but light-colored, with two dark spots behind. Feeds upon the under side of the leaves of many greenhouse plants. The most serious greenhouse pest. Known also as "Verbena Mite."

Remedies.—Kerosene emulsion, or Hughes' fir-tree oil. Kerosene emulsion (2) (1 part to 20 or 25 parts

of water) will kill them if it is applied *thoroughly* to the *under side* of the leaves. The application should be repeated two or three times at intervals of a day or two, or until the mite is destroyed. Thereafter, spray once a week. On roses and most greenhouse plants, the emulsion should be washed off the foliage by the hose, an hour or two after the application.

MUSHROOM. Mushroom-Fly. — The larva bores through the stems of the mushrooms before they are full-grown.

Preventive.—Keep the beds cool so that the fly cannot develop. When the fly is present, growing mushrooms in warm weather is usually abandoned.

ONION. Maggot (*Phorbia Ceparum*, Meigen).—Much like the cabbage-maggot, which see.

Remedies.—Carbolic acid emulsion. Bisulphide of carbon.

ORANGE. Katydid (*Microcentrum retinervis*, Burm.).—A large green grasshopper-like insect, feeding upon the foliage. It is largely kept in check in some localities by a parasitic chalcid fly.

Remedy.—Collect the eggs, which are conspicuous on the borders of the leaves.

Leaf-Notcher (*Artipus Floridanus*, Horn).—Beetle, one-fourth inch long, greenish blue or copper-colored, eating the edges of the leaves.

Remedy.—Jarring.

Mite (*Tetranychus 6-maculatus*, Riley).—On the leaves.

Remedies.—Kerosene emulsion. Sulphur. Practise clean culture.

Scale.—Many species, preying upon the leaves and shoots.

Remedies.—Kerosene emulsion applied with a brush or in spray, just before the trees bloom, and at intervals of two or three weeks as occasion may require. Lye wash. Lye-and-sulphur wash. Pyrethrum decoction. Resin and fish-oil soap. When young the scale is more easily

destroyed. Some species are held in check in California by an Australian lady-bird beetle, which has been introduced for this purpose.

PARSLEY. Parsley-Worm (*Papilio Asterias*, Cramer).—Larva, inch and a half long, light yellow or greenish yellow with lines and spots; feeding upon leaves of parsley, celery, carrot, etc. When the worm is disturbed it ejects two yellow horns with an offensive odor, from the anterior end.

Remedies.—Hand-picking. Poultry are said to eat them sometimes. Upon parsnip, arsenites.

PARSNIPS. Parsley-Worm.—See under **PARSLEY.**

Parsnip Web-Worm (*Depressaria heracliana*, De Geer).—Larva, about half an inch long, feeding in the flower-cluster and causing it to become contorted.

Remedies.—Arsenites, applied as soon as the young worms appear, and before the cluster becomes distorted. The worms are easily disturbed, and hand-picking is often advisable. Burn the distorted umbels.

PEA. Pea-Weevil or Pea-Bug (*Bruchus Pisi*, Linn.).—A small brown-black beetle, living in peas over winter. The beetle escapes in fall and spring and lays its eggs in young pea-pods, and the grubs live in the growing peas.

Preventive.—It is said that coal ashes or sand saturated with phenyl and sown with the peas will prevent attack.

Remedies.—As soon as the mature peas are picked, and while the grubs are only partly grown, subject the peas to a temperature of 145 degrees for an hour. The seed will not be injured. The ripe peas may also be confined in some tight receptacle, and a little bisulphide of carbon added.

PEACH. Aphis (*Aphis Persicae-niger*, Smith).—A small black or brown plant-louse which attacks the tops and roots of peach trees. When upon

the roots it is a very serious enemy, stunting the tree and perhaps killing it. Thrives in sandy lands.

Remedies.—Kerosene emulsion. Tobacco decoction. Tobacco hoed in about the tree will destroy the root-colonies.

Apple-Tree (Round-headed) Borer.—See under APPLE.

Flat-headed Borer.—See under APPLE.

Fruit Bark-Beetle.—See PIN-HOLE BORER.

Katydid.—This insect is often troublesome to the peach in the southern States in the early spring, eating the leaves and girdling young stems.

Remedy.—Poisoned baits placed about the tree.

Peach-Louse or Aphis (*Myzus Persicae*, Sulzer).—A small insect feeding upon the young leaves, causing them to curl and die.

Remedies.—Kerosene emulsion. Soap-and-soda wash. Soap-water. Soap and tobacco.

Peach-Tree Borer (*Sannina exitiosa*, Say).—A whitish larva, about three-fourths inch long when mature, boring into the crown and upper roots of the peach, causing gum to exude.

Preventive.—Make a mound about the tree in early summer, a foot high, and remove it in September; the moth then lays her eggs about the top of the mound, and the tender larvæ are killed by exposure to the weather. A coat of asbestos roofing applied about the base of the tree is recommended as a preventive. Apply washes as for apple-tree borers. Paint the crown of the tree with ordinary paint, to which Paris green has been added. All preventives are unsatisfactory, however, and the only safety is—

Remedy.—Dig out the borers in late fall and early spring.

Peach-Twig Moth (*Anarsia lineatella*, Zeller).—The larva of a moth, a fourth inch long, boring in the ends of the shoots; it sometimes attacks the apple and strawberry roots.

Remedy.—Burn the infested twigs.

Pin-hole Borer (*Scolytus rugulosus*, Ratz).—A black beetle about a tenth of an inch long, boring into the trunk and branches of peach, plum, apricot, and other trees. It is thought to prefer weak or unhealthy trees.

Remedy.—Burn the affected trees or parts. Keep the trees strong and vigorous.

Plum-Curculio.—See under PLUM.

Red-legged Flea-Beetle (*Haltica rufipes*, Linn.)—A flea-beetle feeding on the leaves of peach trees, often in great numbers.

Remedies.—The insects fall at once upon being jarred, and sheets saturated with kerosene may be used, upon which to catch them. Spray with Paris green.

Rose-Beetle.—See under ROSE and APPLE.

PEAR. Apple-Tree Borer.—See under APPLE.

Bud-Moth.—See under APPLE.

Codlin-Moth.—See under APPLE.

Midge (*Diplosis pyrivora*, Riley).—A minute mosquito-like fly; lays eggs in flower-buds when they begin to show white. These hatch into minute grubs which distort and discolor the fruit. New York and eastward. Prefers the Lawrence. Introduced about twelve years ago from France.

Remedies.—Destroy the infested pears. Cultivate and plough in late summer and fall to destroy the pupæ, then in the ground.

Pear-Leaf Blister (*Phytoptus Pyri*, Scheuten).—A minute mite which causes black blisters to appear upon the leaves. The mites collect under the bud-scales in winter.

Remedy.—Burn the twigs in winter or spray with kerosene emulsion.

Pear-Tree Borer (*Sesia Pyri*, Harris).—A small whitish larva, feeding under the bark of the pear tree.

Remedy.—Same as for round-headed apple-tree borer.

Pear-Twig Beetle (*Xyleborus Pyri*, Peck).—Brownish or black beetle, one-tenth inch long, boring in twigs, producing effect much like pear

blight, and hence often known as "pear-blight beetle." It escapes from a minute perforation at base of bud; probably two broods.

Remedy.—Burn twigs before the beetle escapes.

Psylla (*Psylla pyricola*, Forst.). — A curious aphid-like insect infesting the twigs of pear trees when the fruit is setting. They are covered with a sticky material, and in the honey-dew a fungus often develops, giving the twigs a sooty appearance. Often does great damage.

Remedies.—Difficult to combat. Spray with kerosene emulsion just after the leaves have expanded, whilst the nymphs are young. Repeat, if necessary, within a period of two weeks after the nymphs appear, before they are protected by honey dew. During midsummer a forcible spray will destroy a very large proportion of the adults.

Rose-Beetle.—See under ROSE and APPLE.

Rounded-headed Borer.—See under APPLE.

Slug.—See under CHERRY.

Twig-Girdler (*Oncideres cingulatus*, Say). — A brownish-grey beetle, about one-half inch long, which girdles twigs in August and September. The female lays eggs above the girdle. The twigs soon fall.

Remedy.—Burn the twigs, either cutting them off or gathering them when they fall.

Twig-Pruner.—See under APPLE.

PERSIMMON. Twig-Girdler.—See under PEAR.

PINEAPPLE. Katydid (*Acanthacara similis*).—A large katydid which attacks, among other plants, the leaves of the pineapple.

Remedy.—Arsenites, before the plants are mature.

PLANT-LICE.—See APHIDES.

PLUM. Bud-Moth.—See under APPLE.

Canker-Worm.—See under APPLE.

Curculio (*Conotrachelus nenuphar*, Herbst.).—Larva, a whitish grub, feeding in the fruit.

Remedies.—Arsenites; apply as

soon as the calyx falls and repeat two or three times at intervals of about ten days. Plaster and carbolic acid mixture. Jarring the beetles on sheets very early in the morning, beginning when trees are in flower, and continuing from four to six weeks, is probably the most sure procedure. There are various styles of sheets or receptacles for catching the insects as they fall from the tree. Catching beetles under chips or blocks about base of tree, the insects being taken very early in the morning.

Flat-headed Borer.—See under APPLE.

Pear-Twig Beetle.—See under PEAR.

Plum-Gouger (*Coccotorus scutellaris*, Lec.).—A small larva, feeding upon the kernel of the plum. The beetle bores a round hole in the plum, instead of making a crescent mark like the curculio.

Remedy.—Same as for curculio.

Scale (*Lecanium* sp.).—A large circular scale occurring upon plum (and perhaps other) trees in New York.

Remedy.—Thorough spraying with kerosene emulsion (2) (1 part to 5 of water) in the winter. More dilute emulsion in midsummer when the young insects are on the leaves and young shoots.

Slug.—See under CHERRY.

Twig-Pruner.—See under APPLE.

POPLAR. Cottonwood Leaf-Beetle (*Lina scripta*, Riley).—A striped beetle feeding on the leaves and shoots of poplars and willows.

Remedy.—Arsenites.

Willow-Worm.—See under WILLOW.

POTATO. Colorado Potato-Beetle (*Doryphora decemlineata*, Say). — Beetle and larva feed upon the leaves.

Remedies.—Arsenites, either dry or in spray, about a third stronger than for fruits. Hand-picking the beetle.

Mole-Cricket (*Gryllotalpa borealis*, Burm.).—Mature insect curiously formed, whitish, feeding on tubers in low and mucky ground.

Preventive.—Plant potatoes on upland.

Stalk-Weevil (*Trichobaris trinotata*, Say).—A grub boring in the stalk of the potato near or just below the ground. Serious at the west and in some places eastward.

Remedy.—Burn all infested vines. PRIVET or PRIM. Privet Web-Worm (*Margaronia quadristigmatis*, Gn.).—Small larva feeding in webs on the young shoots of the privet, appearing early in the season; two to four broods.

Remedies.—Trim the hedge as soon as the worms appear and burn the trimmings. Attract the moths at night by lights. Probably the arsenites will prove useful.

QUINCE. Round-headed Borers. — See under APPLE.

Slug.—See under CHERRY.

RADISH. Maggot (*Anthomyia Raphani* of Harris, but now considered to be identical with the cabbage root-maggot).—Treated the same as the cabbage-maggot, which see.

RASPBERRY. Cane-Borer (*Oberea bimaculata*, Oliv.).—Beetle, black, small, and slim; making two girdles about an inch apart near the tip of the cane, in June, and laying an egg just above the lower girdle; the larva, attaining the length of nearly an inch, bores down the cane. Also in the blackberry.

Remedy.—As soon as the tip of the cane wilts, cut it off at the lower girdle and burn it.

Raspberry Root-Borer (*Bembecia marginata*, Harris).—Larva about one inch long, boring in the roots and the lower parts of the cane, remaining in the root over winter.

Remedy.—Dig out the borers.

Raspberry Saw-Fly (*Selandria Rubi*, Harris).—Larva about three-fourths inch long, green, feeding upon the leaves.

Remedies.—Hellebore. Arsenites after fruiting.

Root Gall-Fly (*Rhodites radicum*, Sacken).—A small larva which produces galls on the roots of the raspberry, blackberry, and rose, causing the bush to appear sickly, and even-

tually killing it. The swellings are probably often confounded with the true root-galls, which see under R.

Remedy.—There is no remedy except to destroy the galls; if plants are badly affected they must be dug up and burned.

Snowy or Tree-Cricket (*Æcanthus niveus*, Serv.).—Small and whitish cricket-like insect, puncturing canes for two or three inches, and depositing eggs in the punctures.

Remedy.—Burn infested canes in winter or very early spring.

RED SPIDER (*Tetranychus telarius*, Linn.).—A small red mite infesting many plants, both in the greenhouse and out of doors. It flourishes in dry atmospheres, and on the under sides of the leaves.

Remedies.—Persistent syringing with water will generally destroy them, if the spray is applied to the under surface. Fumes of sulphur. Sulphide-of-soda wash. Kerosene emulsion as for Mites.

RHUBARB. Rhubarb-Curculio (*Lixus concavus*, Say).—A grub three-fourths inch long boring into the crown and roots. It also attacks wild docks.

Remedy.—Burn all infested plants, and keep down the docks.

ROOT-GALL, CROWN-GALL. — A widespread disease, of which the cause is wholly unknown. It occurs upon the peach, apple, pear, raspberry, blackberry, and other plants. The swellings are hard and woody, and appear both at the crown of the plant—where they sometimes attain the size of one's double fists—and on the small roots.

Remedy.—Nothing is surely known in the way of remedy except to destroy badly infested trees. It is recommended to dig away the earth, cut off or pare off the knots, and to paint the wounds with Bordeaux mixture. Nursery trees should be inspected for the galls.

ROOT-KNOT (*Heterodera radicola*, Mull.).—A disease characterized by the knotting and contortion of the

roots of the peach, orange, and many other plants. The knots are mostly rather soft swellings, and on the smaller roots. It is usually most destructive on the peach. It is caused by a nematode, or true worm. Gulf States. Attacks greenhouse plants in the north.

Preventive.—Plant non-infested plants in fresh soil; bud into healthy stocks. Fertilize highly, particularly with potassic fertilizers. Set the trees eight or ten inches deep in high and dry soils. Infested small trees may be remedied, in part at least, by transplanting them into highly manured holes which have been prepared contiguous to them. Does not live in regions where the ground freezes deeply. If it is feared in greenhouses, see that the soil has been thoroughly frozen before it is used. Whitewash the benches. See ROOT-GALL.

ROSE. Root Gall-Fly.—See under RASPBERRY.

Mealy-Bug.—On roses, a gill of kerosene oil to a gallon of water is said to be a good remedy. Syringe the plants in the morning, and two hours later syringe again with clean water. See also under MEALY-BUG.

Rose-Beetle, Rose-Chafer or "Rose-Bug" (*Macrodactylus subspinosus*, Fabr.).—Beetle three-fourths inch long, light brown, feeding upon the leaves, blossoms, and fruit. A very difficult insect to fight. Most abundant upon sandy lands. Often invades fruit plantations, devouring almost everything before it. All methods of dealing with it are unsatisfactory.

Remedies.—Hand-picking. Knocking off on sheet early in morning. Bagging. Pyrethrum. Kerosene emulsion. Pyrethro-kerosene emulsion. Eau celeste. It is said to prefer Clinton grapes, spireas, rose-bushes and magnolias, and it has been suggested that these plants be used as a decoy. Open vials of bisulphide of carbon hung in bushes and vines are recommended by some.

Sludge-oil soap, a manufactured material. Spraying with dilute lime whitewash. Hot water, at a temperature of 125 degrees to 130 degrees Fahrenheit. To prevent the insects from breeding, keep the light lands—in which they breed—under thorough cultivation, and especially never seed them down.

Rose Leaf - Hopper (*Typhlocyba Rosae*, Harris).—Hopper, very small, white, often mistaken for thrips; lives on the leaves of roses. Various stages of growth may be found in the leaves throughout the summer, and even on indoor plants.

Remedies.—Whale-oil soap. Kerosene. Kerosene emulsion. Nicotyl vapor. Dry pyrethrum blown on the bushes when they are wet.

SAN JOSE SCALE (*Aspidiotus perniciosus*, Comst.).—A scale-insect recently introduced into the East from California (supposed to be native of Chile), living upon a variety of fruit-trees. The scale is generally circular, rarely a little elongated or irregular, one-sixteenth inch across (or rarely twice as large on succulent shoots or on the fruit).

Remedies.—Kerosene emulsion, or whale-oil soap (2 pounds to the gallon), in the winter, for the East. Upon the Pacific coast, resin washes.

SCALE-INSECTS.—Various species of small insects inhabiting the young growth of trees, and sometimes the fruit, in one stage characterized by a stationary scale-like appearance. Kerosene emulsion and resin washes in the winter are the best remedies. Species which migrate on to the young growth in spring can be readily despatched at that time by kerosene emulsion.

SNAILS.—These animals are often very troublesome in greenhouses, eating many plants voraciously.

Preventives.—Trap them by placing pieces of turnip, cabbage, or potatoes about the house. Scatter bits of camphor-gum about the plants. Strew a line of salt along the edges of the bed. Lime dusted

about the plants will keep them away.

SQUASH. Borer or Root-Borer (*Melittia Ceto*, Westw.).—Larva, boring into the root or crown of squashes and other cucurbits. The moth flies only during the day, and lays its eggs in various places upon the plant.

Remedies.—Catch the moths, which are an inch long and blackish-brown with an olive-green lustre, as they settle upon the leaves (near the base on the upper side) at twilight. When the vines begin to run, cover the fourth or remoter joints with earth, in order that they may take root and help support the plant.

STRAWBERRY. Crown - Borer (*Tyloderma Fragariae*, Riley).—White grub, one-fifth inch long, boring into the crown of the plant in midsummer. The mature insect is a curculio or weevil.

Remedy.—Burn over the field after the fruit is picked. If this does not destroy the insects, dig up the plants and burn them.

Grub or May-Beetle.—See under **MAY-BEETLE**.

Leaf-Roller (*Phoxopteris comptana*, Frol.).—Larva, less than one-half inch long, feeding on the leaves, and rolling them up in threads of silk; two broods.

Remedies.—In first stage of attack apply hellebore or arsenites if the attack is very early, or if it is after the fruit is off. Burn the leaf-cases.

Root-Borer (*Anarsia lineatella*, Zeller).—Larva, about one-half inch long, whitish, boring into the crown of the plant late in the season and remaining in it over winter.

Remedy.—Burn the plant.

Root-Louse (*Aphis Forbesii*, Weed).—From July to the close of the season the lice appear in great numbers on the crowns and in the roots of the plants.

Remedies.—Rotation in planting. Disinfect plants coming from infest-

ed patches by dipping the crowns and roots in kerosene emulsion.

Saw-Fly (*Emphytus maculatus*, Norton).—Larva, nearly three-fourths inch long, greenish, feeding upon the leaves; two broods.

Remedies.—Hellebore. Arsenites for second brood.

Weevil (*Anthonomus signatus*, Say).—Beetle, one-tenth inch long, reddish, feeding on flower-buds, particularly those of the polleniferous varieties.

Preventive.—Covering the plants with newspapers or cloth is said to be the only effective means of checking the pest.

Remedies.—Plaster and crude carbolic acid mixture.

SUMAC. Apple-Tree Borer.—See under **APPLE**.

Jumping Sumac-Beetle (*Blepharida Rhois*, Forst.).—Larva, half-inch long, dull-greenish yellow, feeding on leaves; two broods.

Remedy.—Arsenites.

SWEET POTATO. Saw-Fly (*Schizocerus ebenus*, Norton).—Small larva about one-fourth inch long, working upon the leaves. The fly is about the size of a house-fly.

Remedies.—Hellebore and pyrethrum are to be recommended; also arsenites.

TOMATO. Fruit-Worm (*Heliothis armiger*, Hub.).—Larva, one-inch in length, pale green or dark brown, faintly striped, feeding upon the fruit. Also on corn and cotton.

Remedies.—Hand-picking. White hellebore.

Tomato-Ringer (*Stictocephala festina*, Say).—A leaf-hopper which injures the stem of the young tomato-plant by puncturing it in a ring. Southward.

No remedy is known.

Tomato-Worm (*Phlegethontius celeus*, Hbn., or *Macrosila quinque-maculata*, Haw.).—A very large green worm feeding upon the stems and leaves of the tomato and husk tomato. Seldom abundant enough to be very serious; kept in check by parasites.

Remedies.—Hand-picking. Helldore. Arsenites.

TURNIP. Maggot.—See under CAB-BAGE.

VERBENA. Mite.

WHITE ANTS, or TERMITES.—These insects often infest orchard trees in the Southern States, particularly in orchards which contain old stumps or rubbish.

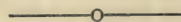
Remedy.—The soap-and-arsenites wash brushed over the trunk and branches of the tree.

WILLOW. Willow - Worm (*Vanessa antiopa*, Linn.).—Larva, nearly two inches long, black, feeding upon leaves of willow, elm, and poplar; two broods.

Remedy.—Arsenites.

WIRE-WORM (Various species).—Slim and brown larvæ, feeding upon the roots of various plants. They are the larvæ of the click-beetle or snapping-beetle.

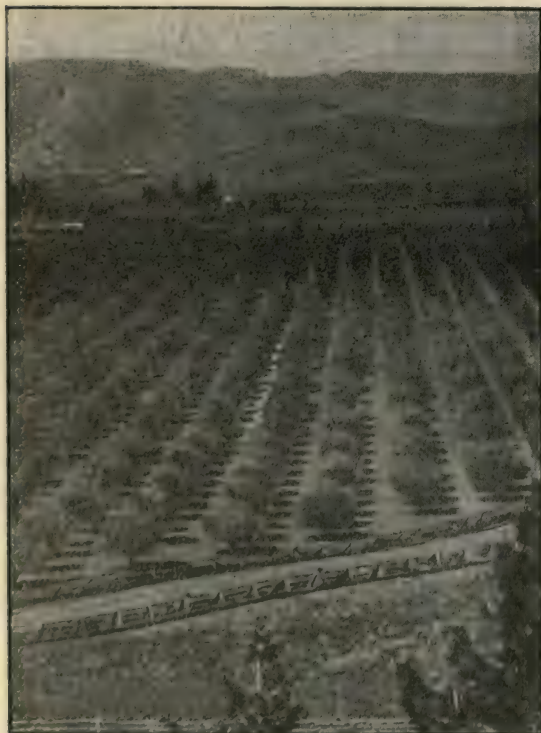
Remedy.—Arsenites sprinkled upon baits of fresh clover or other material, which is placed about the field, under blocks or boards. Sweetened corn-meal dough also makes a good bait. The best treatment is to plough infested land in the fall. A system of short rotations of crops will lessen injury from wire-worms.



A genial-looking gentleman wanted an empty bottle in which to mix a solution, and went to a chemist's to purchase one. Selecting one that answered his purpose he asked the shopman how much it would cost.

"Well," was the reply, "if you want the empty bottle it will be a penny, but if you want anything in it you can have it for nothing."

"Sure, that's fair," said the customer, "put in a cork."



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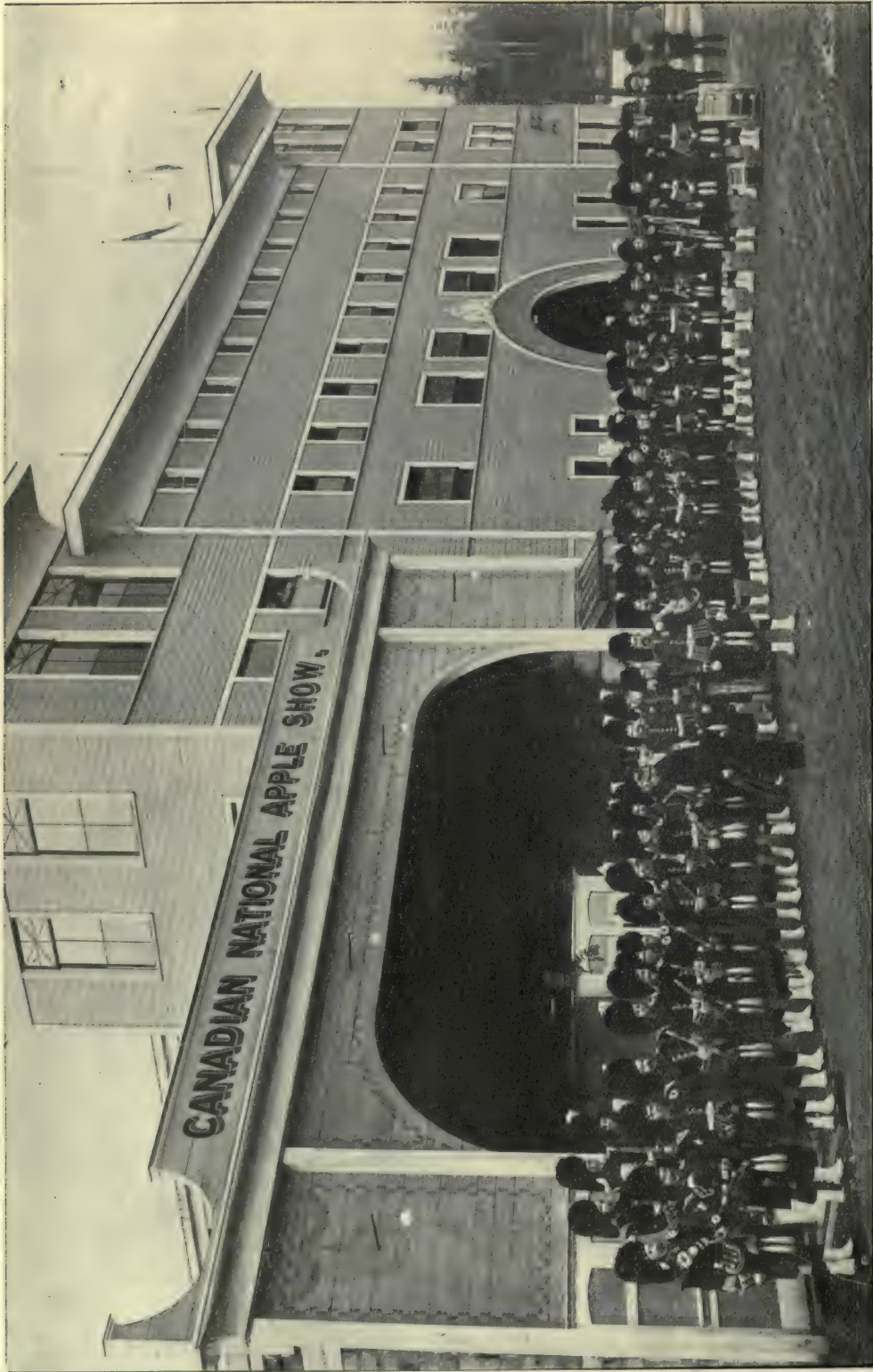
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Maxwell Smith, Editor.



THE 48TH HIGHLANDERS BAND
Maxwell Smith, Manager First Canadian National Apple Show, and Bandmaster John Slatter in front.

Photo by W. J. Carpenter, Vancouver

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No. 3

Evangeline's Land and the First Canadian National Apple Show

By E. PAULINE JOHNSON

THE ballad of "The Nine Sisters" has just been sung—its words set to new music, the harmony of which swept across the continent, catching the listening ear of all who love unity and concord. It is a ballad that tells of the toil of men's hands, of the smile of benevolent climates, of the opulent sunshine, that have all assisted in perfecting a fruit unequalled throughout the world, and of which these nine sister provinces of Canada will sing for many a moon to come.

Since Confederation the Atlantic has never been so near the Pacific as in the recent display of the gold and scarlet products of Canadian orchards. It has been a vast national chorus, the principals, a group of nine beautiful maiden provinces, singing to the world while they bound themselves together with frail but undying garlands of apple blossoms.

And from the old-time historic land that

"Borders the mournful and misty
Atlantic"

comes one of the most fragrant strands in all that perfumed garland. Up to the "Sunset Gateway of the Dominion" has drifted a breath from the far-off Annapolis Valley, which teems with olden romance, as well as with luxuriant orchards, the valley where history and poetry yet wander together, their shadowy fingers linked in an inseparable clasp that even modern enterprise, competition,

barter and commerce can never quite divorce.

It has been my privilege to travel through "Acadia" in apple blossom time, to lean back in the car of a lazy train and inhale the fragrance that drifts through the windows from a thousand orchards, to watch the lift and fall of tides on the Basin of Minas, and to trace with half-closed eyes the far blue outlines of Blomidon, to imagine I can detect a trace of the people of "Evangeline" among the girls who gather at the village railway stations. Then later in the season, when the apple harvest days bring a fuller fragrance, when ripening fruit circles on every side, when the huge carts drawn by ponderous oxen disgorge their world-renowned freight to await shipment overseas—it has again been my privilege to traverse Acadia and to breathe its atmosphere of old France which in spite of intervening centuries still lingers in a land that knows not the changes of our keen-blooded youthful west.

The Annapolis Valley, home of gnarled orchards and famous fruits, is old, old, old. It has the very stillness of age. The young slips of trees set out yearly in symmetrical rows seem like impertinent youth in a country where the air of yesterday is all-pervading. Time passes the valley by; the years do not alter it; it sleeps in winter, wakes in spring, and rests at all times. The monstrosity of cities has never touched even its margin; it is primitive, melancholy, indescribably placid, faultlessly beautiful and strangely aloof from every other

portion of Canada. Even on the prairies of Saskatchewan, or in the fastnesses of the Rockies have I ever been conscious of such profound silence as that which enwraps the Land of Evangeline. The orchards may be bursting into blossom, or the teeming trees lavishing their yield of fruits—conditions do not disturb Acadia, for she dreams and dreams of past glories, never seeming to realize the present glory of her fruit-giving part in the world of this century.

But the stillest place in all the valley is in and above the village of Grand Pre, immortalized by Longfellow in his exquisite poem. Here are yet the ancient French well and the row of gnarled old willows, brought from France as seedlings. "Evangeline's Well" it is called, and without doubt it speaks silently of days long gone. Every reader of history knows that with all the beauty of the poem Longfellow was both historically and geographically wrong, but that does not lessen the fascination of the Land of Evangeline, and one almost desires to forget historical facts and to remember only the little Acadian heroine of whom he writes so aptly:

"She was a woman now, with the heart
and the hopes of a woman.

Sunshine of Ste. Eulalie was she called,
for that was the sunshine

Which, as the farmers believed, would
load their orchards with apples."

These very orchards were set out with seedlings brought, like the willows, from France, and many of them planted on the lands reclaimed from the sea by miles and miles of dykes. These dykes were first built by the French, which in that vicinity numbered some four hundred. (The Acadians all told numbered about ten thousand.) The reclaimed lands were most rich and productive, and it is probable that the Annapolis Valley owes its wealth of apple output today to the shrewdness of the early French pioneers and their indefatigable dyke-building. The expulsion of these early French, or the Acadians as they were called, occurred in 1755. They had occupied the province for one hundred and fifty years, during which time England and France were striving for

supremacy in the new world. But as early as 1504 French fishermen visited these shores, and the vicinity of Grand Pre itself was frequently the retreat of pirate ships, or an occasional privateer or corsair. Then followed in 1604 De Montes, a nobleman of the French Court of Henry IV. He came for colonization purposes, bringing Champlain with him. This was really the beginning of French history in the valley, which was then called La Cadie, or L'Acadia, and then was also founded Fort Royal (now Annapolis) in 1605.

Just here it may be permissible to diverge to the curious fact that many of the Micmac Indian words end with the termal 'cadie'—which the tribe will explain as meaning "abounding in."

Old Fort Royal is still in a state of excellent preservation. Though grass-grown and ancient not a detail of its construction is obliterated. The old French powder magazine is yet intact, its walls, seven and a half feet thick, have defied the centuries, and stand as monuments to old-world workmanship. The very stones used for the corner abutments and the arch of the interior were brought from France in 1642.

When England finally gained supremacy in the new world, Halifax was founded under Governor Edward Cornwallis in 1749, and the oath of allegiance was demanded from the Acadians, or refusing this they were given to understand that they were to forfeit their lands and possessions throughout the province.

They refused allegiance, and for years were a thorn in the flesh of England. Left to their peaceful lives of farming and fruit-growing, they were yet malcontents, and finally broke into open conspiracy and rebellion. After years of storm it was finally Governor Charles Lawrence who banished them from British domains in 1755, after which Acadia settled into the peace that still obtains in her fruitful valleys.

It was upon this expulsion of the Acadians that Longfellow founded his "Evangeline," which when published in 1847 brought out a storm of disapproval from critics familiar with the real history of Nova Scotia. That the famous

poet attributed undue severity and inhumanity to the King of England and to the colonial governors was without doubt; furthermore, that he endowed the Acadians with a meekness and humility that was greatly exaggerated was also without doubt; but notwithstanding all this, he still lives in our hearts as the sweetest of all American singers; and when one suddenly and unexpectedly comes upon the marble bust of him in Westminster Abbey, one's eyes grow strangely moist, and the heart that loves beautiful things longs just a little tensely for the valley that he has immortalized and made the whole English-speaking world desire to see. How frequently in the poem does he write of these Nova Scotia orchards:

"Merrily, merrily whirled the wheels of
the dizzing dancers,
Under the orchard trees, and down the
path to the meadow."

"Under the open sky, in the odorous air
of the orchard,
Bending with golden fruit was spread
the feast of betrothal."

The entire romance exhales apple blossoms, just as the valley does today. The little town of Kentville is particularly redolent of them; it is fairly encompassed by orchards, which are so productive that scores of trees must have their branches supported as the apples ripen, so heavy is the yield. An orchard owned by Mr. Eaton, of Kentville, has its roots in the Cornwallis River, a silent little stream that waters many farm lands, many fruit gardens. The last time I saw the gentle Cornwallis it was sleeping between shores of snow. Its fringing cedars were heavy with frost and ice, but it was late winter and I knew that within a few weeks its serene surface would be mirroring a thousand blossoms of rose and pink and pearl, which in the autumn would turn to great globes of crimson and gold. If, as some would have us believe, Governor Cornwallis was an autocrat, the little river that bears his name holds nothing of his nature.

The average valley man does not know what work means—his trees work for

him. Nature has so endowed those particular counties that there is small battle to do against invading pests, small labor of pruning or picking. Labor is cheap in the Maritimes, and no one ever hastens unduly; everyone has leisure even in the busiest fruit season to "pass the time of day" with you and to ask you where you came from and whither going. It was in Kentville that I encountered a typical "Blue Nose" who obligingly stopped his ox-cart to allow me to be "snapshotted" on his load of apples. He remarked that "this is what we Scotians call an oxmobile." I commended the name. Then he asked where I lived. I quoted Longfellow to him, saying, "My body is in Segovia, my soul is in Madrid."

"Eh?" he ejaculated.

"I live in Ontario, but my heart is in British Columbia," I explained.

"That's a bad way; better stay here," he said.

"What have you got here to keep me?" I inquired.

"Poetry and pippins," he replied laconically.

But it was this same "oxmobilst" who told me of the Micmac romances and legends of the valley, of the ancient God of the Micmac tribe, the great spirit whom they called Glooscap, who had his happy hunting grounds in the heights of Blomidon, across the Basin of Minas, but who abandoned this paradise upon the first coming of the pale faces. Indian romance has the same pathetic trend in every tribe from ocean to ocean. Their Gods and Great Spirits have always disappeared at the sound of the first footfall from the white invaders.

"Glooscap" of Indian tradition, De Montes of the gallant court of France, Cornwallis who represented his British Sovereign, Evangeline, born of Longfellow's exquisitely gentle mind and imagination—what a constellation of history and romance, superstition and poetry surrounded the growth of the peerless Gravensteins of which the Annapolis Valley boasts. Was it some subtle touch of the bygone days of Acadia that only a few days ago made those fruit perfumes so hauntingly alluring? Who knows!

Reflections of a Worldly Apple

After the First Canadian National Apple Show

"**N**OW that the excitement is over" (Madame Fameuse gave a little sigh of relief), "let us sit down and talk it over. Given an entertaining companion, one of the pleasures of life is talking things over."

"Perhaps you prefer to talk to one of the gentlemen," suggested the Lady Apple, who, to tell the truth, was a little afraid of Madame's pointed tongue—"Tompkins King, for instance, or Ben Davis. I am not observant myself—"

"On the contrary," interrupted Madame Fameuse, "I take the greatest comfort in your society. In you I repose utmost confidence. I tell you something, and it goes no further. You are a listener beyond compare. As for Tompkins King and Ben Davis, I may want to talk about them, and if I am talking *to* them, how can I?"

"You are very kind," smiled the Lady Apple, gratified, yet feeling rather like a steam safety valve; and because she knew it was expected, she asked without delay what Madame thought about the great assembly of the Apple family.

"As a spectacle," replied that lady (a lovely creature she was—with carmine lips and cheeks—like a full-blown damask rose) "as a spectacle it was superb. Lavish in color, in breadth, in sweep. Lustrous as gold and silver. With light pouring from a thousand lamps the *tout ensemble* was a pomological version of the New Jerusalem, whose walls were garnished with all manner of precious stones. I saw inlaid masses of jasper and sardonyx, polished and flawless; I saw emerald, chalcedony and sardios, cubic yard upon cubic yard; chrysophrasis and chrysolite; I saw great blocks of beryl, topaz and jacinth—all manner of precious stones. Confidently, as one member of the family to another, we made the handsomest show on earth."

"Individually," proceeded Madame

Fameuse after a pause, "everybody looked well—aided more or less by art. Did you notice King David?"

"He never looked handsomer," declared the Lady Apple. "Every inch a king."

"But fearfully made-up, my child—polished like a great, glittering ruby—and *very* carefully turned out. How pleased he must have been at Jonathan's success—a fat prize in dollars and a gold medal."

"I fancy he was too much absorbed in Salome to notice anything else."

"Salome!" gasped Madame Fameuse, "Salome! Don't tell me that bold, half-clad creature was among those present? The sauciest apple that grows."

"I saw her name on the invitation list," continued the Lady Apple, "and somebody told me that King David was rushing her strong. Those are the words."

"That poor fool of a David," Madame shook her head. "So learned, yet so foolish. La-la-la-la-la! *Cherchez la femme!* Tell me, did you meet those bragging Grimes Golden? There must have been thousands of them—fair, smallish people from Yakima that took up a great deal of space and shouted incessantly, 'We challenge the world!' Barbarous manners; of course, you wouldn't know them. Who else was there?"

"The Yellow Newtowns have been making great strides of late," hinted the Lady Apple in her artless way.

"Tainted money, my dear." Madame's grasp of affairs was wonderful. "*There's* a family that owes its position to systematic, scientific grafting. Grafting has made the Yellow Newtowns. Did you taste their cider?"

"I am a teetotaler, but a great friend of mine, Black Ben, grew very fond of it. Too fond, indeed! He swore he loved the faint equine flavor. Poor fellow!"

He became ciderically embarrassed on several occasions. He used to see pink and blue colts with Yellow Newtown heads, and other strange formations."

"Disgusting," sniffed Madame Fameuse. "Who else was there?"

"Tasmanians——"

"A little jaded and passe."

"Nova Scotians——"

"Good, worthy people, but without our——our——"

"Precisely," agreed the Lady Apple. "I have always thought so. I heard so many voices say, 'Where are the Nova Scotia apples? I haven't tasted an apple that was an apple since I left Annapolis.'"

"Mere sentiment," exclaimed Madame, a little nettled. "Not a word of truth in it. And they know it. One must make allowance for sentiment. By the way, who's your fat friend?"

The Lady Apple blushed furiously. "He comes from Wolfe River."

"A dainty little ingenue like you always falls in love with bulk." Madame's tone was base. "That great lump! Showy and useless. He can't keep you in food. Why don't you marry one of the Baldwins—they're steady old things; or Ben Davis—he has a reputation, and he's as good-looking, every whit, as King David?" The Lady Apple shook her head. "The Greenings will never die of beauty, but they wear well—everybody respects them; the McIntosh is a fine, stalwart Highlander, but the sort of man who wears a red necktie. Look at the Black Twigs; look at N. Spy; the Pippins; the Ortleys. Excellent people. Pomme Grise is a good enough sort, but brown as a mulatto. Why not old Tompkins King? There are the Spitzenbergs, the Gravensteins and Cox's Orange, but to marry into those families you must needs change your faith. For my part, I think you're a fool not to take old Tompkins King."

"Our ideas are so different," sighed the Lady Apple. "To me love is everything."

"Tuts!" cried Madame sharply, "stuff and nonsense! Did you see the funeral? An up-country contingent was lying in

state. All the trappings of defunct royalty—purple pall—white flowers—undertakers' knots, and all the rest of it."

"Personally," said the Lady Apple with decision, "I loathe shop accessories. Can the product of a loom compare with Nature's work? I do protest against any setting but Nature's. If I were swathed in purple satin streamers and goodness knows what not, I should burst with rage."

"Talking of funerals," a slight melancholy tinged Madame's tone, "when my turn comes to leave life's orchard I shall cast no longing, lingering look behind—on one condition."

"What condition, dear Madame Fameuse?" enquired the Lady Apple solicitously.

"For me dissolution would have no terrors if, in the next state, I might become golden nectar, or marmalade, or compote, like the departed spirits above," she nodded toward the east gallery, where rows of delectable jars were spread. "So immortalized I could face the end without a tear."

"Better to be gathered in the prime of life," sighed the Lady Apple, "than to whither on the branch."

"Enough of worms and codlin moths!" cried Madame. "While we live let us live. *Voila tout!* Listen, my child. Another day of that music, and I should have eloped with any one of the dashing '48th'."

"I am like Jessica," confessed the Lady Apple, "I am never merry when I hear sweet music."

"Who said anybody was merry?" demanded Madame with some indignation. "Merry, indeed! I was more than merry. I was sublimely miserable. That music stirred me to the core. I wept like a fool over 'Auld Robin Grey' and 'The Land o' the Leal.' No words can express the pleasure they gave me."

"So often I find myself dropping into Scotch idioms, a thing quite foreign to me," began the Lady Apple. "I find myself saying 'Dinna fash yersel'; and 'Fair sickenin'; and 'Sic a pother' and 'Ye ken fine' and 'I maun gang the

nod.' Did the '48th' affect you like that?"

"Aye," said Madame absently, "they did that."

"Altogether," summed up the Lady Apple, who was becoming a little pale and weary, "the assembly was worthy of Canada——"

"Except the Salome incident," murmured Madame.

"And before we leave I should like to drink the health of that optimistic Canadian who brought us all together—Manager Maxwell Smith." She lifted an imaginary glass.

"Done!" cried Madame following her lead. "And whilst we are about it, let us drink to our noble selves. The Apple family! A feast for the palate and the eye; sustaining and nourishing; a source of health and wealth. Living or dead, without a peer, The Apple!"

"One moment," begged the Lady Apple, stirred by a memory, "for the sake of the '48th', let me put it like this —'Here's tae us! What's like us?'" And Madame chimed in with ringing assurance, "Nabody!"—ALEXANDRA, in the *Vancouver Daily Province*.

Temptation

We have seen them red and yellow,
And the monster speckled fellow,

They were ranged before us tempting to the sight;
Yes, they all gave us this greeting,
"Take a bite, we're meant for eating,"

But we didn't own the nerve or have the right.

There was one who wept with feeling,
Talked of cruel and heartless dealing,

'Cause we stood and idly watched and never ate;
Then before our very vision
He was handed the decision,

As the most delicious apple up to date.

Oh, to stand and watch an apple
Is to grit our teeth and grapple

With the fear that we may steal it quick and go;
It's a feeling we have often,
It's a curse time will not soften,

And it comes around with every Apple Show.

—Addison B. Schuster.

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

FRUIT CULTURE in British Columbia seems to be attracting considerable attention just now in this part of Central Canada. Fruit lands in the Pacific province have been widely advertised in the newspapers circulating in the capital and throughout the Ottawa Valley country and in other ways during

the summer and fall, and many heads of families and others who were thinking of seeking new homes in the prairie provinces have gone to the coast instead, have remained there, and are sending for their relatives. The growing demand for labor in British Columbia has proved an additional inducement to migrate to Canada's farthest west, and is attracting

many fine young sons of the soil, who intend to work on the railways and in the lumber camps, with the intention of eventually locating on fruit lands or elsewhere as opportunities may present themselves. The indications favor the belief that the movement will assume larger dimensions than anyone could have anticipated when the openings of the coast in connection with fruit culture first began to be generally understood east of the great lakes.

Canada's fruit trade with the mother-country is evidently destined to expand quickly. The members of the delegation of West of England manufacturers, shippers and business men who came over to Canada from the ancient and great go-ahead city of Bristol to investigate trade matters between Canada and the British Isles appear to have been greatly impressed by what they saw for themselves of the fruit districts in different parts of the Dominion. Mr. E. Lowther, one of the delegates, at a Chamber of Commerce dinner at Bristol to welcome the delegation home, made a noticeable reference to fruit among other Canadian products expected to be received at Bristol docks in future for distribution in the West of England, the Midlands and other neighboring sections, containing within a radius of 100 miles ten million consumers, and within 120 miles twenty million. He said there were "immense possibilities in Canadian fruit." He saw "scores of tons of peaches rotting on the ground," because the growers had not the labor to handle them—a detail that can be remedied when permanent regular markets are secured. It was at length possible by the splendid fast service they had in the Royal Steamship Line to bring "an enormous amount of fruit through to Bristol." Some of the Canadian shippers, however, had yet to learn how to pack peaches for transportation across the Atlantic. The consumer in England could get fruit from far-away Australia and California, and, he asked, Was there any reason why they should not get it from Canada?

It was hoped that the trade might not only come through Bristol, but be distributed through Bristol. Something

in that direction could be accomplished—and it would not take a great deal of money—by a company to be called, say, the Canadian Fruit Distributing Company. It might have a small beginning, but they all knew what the banana trade (which also had a small beginning) had become in England. He should like to see peaches brought into Bristol, not only for well-to-do buyers in the early season when fruit is very expensive, but later on for the masses of the people, when it is plentiful in Canada, and, compared with the first arrivals from elsewhere, not only plentiful, but cheap.

The official report of the Bristol commercial delegation to Canada mentioned Canadian fruit in these words: "It was with satisfaction we learnt that Bristol was regarded with much favor as a place of import for Canadian fruit, now that the splendid service of fast steamships inaugurated by the Canadian Northern Railway provides such rapid and satisfactory transit. It was found that the peaches—the first ever exported from Canada—consigned this season to Avonmouth, and then sent on to their destination, where they arrived in splendid condition, obtained a ready sale." It was not very long ago that Canadian peaches were unknown at Covent Garden and in other famous British markets, though I very much suspect, if the truth was told, it would be discovered that some of the choicest peaches sold late in the season in those markets as "Californian" were grown north of the line, and should have been disposed of as Canadian. But that era has passed away, and Canada is taking her rightful place in the front rank among the fruit-producing countries of the world.

Mr. D. H. Ross, Canadian Trade Commissioner in Australia, made the following reference, in his last published report to the department here, to the Australian apples for the National Apple Show at Vancouver: "As a result of the request sent to this office by the management of the Apple Show to be held at Vancouver early in November next, a small shipment of twelve cases has been forwarded for the exhibition by the largest fruit exporters in Australia. The

varieties of Tasmanian apples known as Scarlet Pearmain, Sturmers and French Crabs were included in the consignment. The fruit was held in cold storage for several months, and their condition is not likely to compare favorably with freshly picked apples from the famed Okanagan district. It was impossible to obtain apples from other parts of the Commonwealth, owing to its being the reverse season to their growth. As Canadian and Australian apples are grown in opposite seasons, it is considered that a reciprocal trade of some considerable extent could be realized by capable representation in the Dominion and in the Commonwealth."

Mr. Ross also mentioned a report that a large shipment of apples from Seattle was expected at Sydney, N. S. W., and added that from advices received in previous years it appeared that the prices ruling in the home market were more attractive to British Columbia growers than the risk of sending consignments to Australia. To realize the highest prices apples should arrive in Sydney and Melbourne not later than the end of October, before the Australian small fruits and berries are placed on the market. He further writes: "The result of holding apples in cold storage for a prolonged period was recently demonstrated to the satisfaction of refrigerating experts at the cold stores of the Victorian government in Melbourne. On April 1 last 20 cases of Five Crown apples were placed in the cool chambers, and after nearly six months were found to be in excellent condition. The apples looked as if freshly picked, and although somewhat mealy to the taste, were in good marketable order. It is evident that careful refrigerating is an important factor against oversea apples finding a remunerative market in Australia, and also in continuing exports far beyond the usual time."

For a number of years the government of Victoria have leased, at an annual rental of £15,000, the cool stores built in 1892 by the corporation of the city of Melbourne. The building and plant have proved inadequate for the rapidly growing exports requiring re-

frigerating. Following the example of South Australia, the government of Victoria have decided to erect extensive cool stores in Melbourne, which will embrace all modern improvements. Plans and specifications are now being prepared with a view to having the work completed without delay. The producers in Victoria will soon derive the benefit of three large cool stores operating under state or civic ownership—two in Melbourne and one in Geelong.

Amsterdam advices state that the yield of table apples turned out better than had been expected, but on the whole the average yield and quality were low, in some districts the fruit being good and in others "very bad." The crop of pears was poor. Grapes grown under glass were very good, but outdoor vines did not bear well.

Canadian Trade Commissioner J. T. Lithgow, Glasgow, sends an account of the apple bazaar in that city: "The apple market," he writes, "or bazaar, as it is generally called, is one of the most interesting places to visit in Glasgow. Situated in Candleriggs street, it contains about 25 subdivisions, occupied by different brokers and dealers. These are all fenced around with light picket structures, and in many of them seats are provided for prospective purchasers while the brokers or their clerks dispose of certain portions of their stock at auction. These sales are usually in small quantities to the retail dealer. Opposite the bazaar the large sales take place every Tuesday and Friday. In a large building—the lower portion of which is occupied by Simons, Jacobs & Co.—there are three flats devoted to the wholesaling of fruit. On the third storey there is a good-sized amphitheatre erected, with a seating capacity of 400, each person having a separate chair. At one side there is a rostrum, with desks and tables for the accommodation of the auctioneers and their staffs.

"The fruit comes up on elevators in full view, and is sold by sample. A large wicker basket stands beside the barrel of apples, and half of its contents can be emptied into this basket, thus exposing the whole of the fruit. Each person is

supplied with a complete list of the fruits to be offered for sale, giving the name of the broker, the lots (which are all numbered), the steamer by which the fruit arrived, the name of the packer, the variety and classification, as tight, shake and slack, which really means first, second and third grade. These lists are carefully prepared on a mimeograph and are very distinct, leaving room on the margin to note down the prices obtained. Each broker is allowed half an hour to auction, and then makes way for the next in turn, and so on. When the sale begins a sample barrel of apples comes up on the elevator. By turning to the list it is noted, for instance, that this is lot No. 3, brand A. L., fancy red pippins, Maine apples, ex ss. Parisian, five barrels in the lot. The auctioneer calls for bids, and unless he has placed a reserve price on the lot, sells to the highest bidder. The bell rings, the elevator goes down, and another comes up with the next lot. If there is a larger number in the lot offered than one dealer cares to take, he announces he will take 5 or 10 barrels, as the case may be, and other dealers have the privilege of buying at the same figure until the whole lot is disposed of.

"In watching this sale it was noted that there were apples from Maine, New York and other eastern states, Canada and Lisbon, all sold in the open market on their merits to the highest bidder. There were observed apples in boxes from Yakima Valley, Grand View, Washington, United States, called 'Kings,' containing from 80 to 100 in a box, in good condition, well packed, wrapped in paper, so it will be seen that the Western American states are competing with the East and Canada in this market.

"It certainly is regrettable that the red stamp of the Canadian inspector 'falsely branded' should be found on at least five barrels in one Canadian shipment. It would seem to be a better policy to sell these apples in the home market and not to let it be known here that the branding in all cases cannot be relied on. The Canadian pears have to

meet the competition of California and the Continent, besides the home production, and while in most cases they were well packed and boxed and were favorably received, yet in a few others the difference was most noticeable, and entirely to the detriment of the Canadian pack.

"It must be remembered that this market is open to the world, and from Tasmania to Washington, United States, all are competing for it. From observation it seems that the dealers go more on the appearance and coloring of the fruit than the flavor, so it behoves the Canadian shipper to have his fruit well packed, both apples and pears, to present the most attractive appearance."

Some of the shipments of Canadian peaches had reached Glasgow, and Mr. Ross had this to say about them: "Canadian peaches were on the market here for the first time this month. They were well boxed and packed, presenting a very fine appearance, and realized good prices; in fact, the apples, both in barrels and boxes, pears and peaches received in the later shipment were all very creditable."

Some large apples are grown in Canada, and the largest of them all this year, I believe, was the product of British Columbia. I have not seen the measurements, but I hear that the British Columbia specimen weighed more than the Gloria Mundi apple grown at Hereford, England, as cabled from London recently, which was said to weigh 27 ounces, with a circumference of 16½ inches. Mr. R. B. Whyte, a well-known merchant and horticulturist here, has grown Wolfe River apples up to 17 ounces, and has heard of specimens up to 19 ounces, but has no record of the weights. Perhaps there are among the subscribers to *The Fruit Magazine* apple growers who can give particulars of the heaviest and largest apples known to have been grown in Canada. It might interest many readers. The Wolfe River apple grown in the Ottawa Valley is a famous sort for pies—not too juicy and well flavored.

Editorial

A Merry Christmas

* * *

DECEMBER.

"I love thee, Winter, well!" wrote the poet Southey.

We all love a winter "frosty but kindly," and in December we hail with delight good "seasonable weather."

With his ice and snow and rime
Let bleak winter sternly come;
There is not a sunnier clime
Than the love-lit winter home.

So sang Alaric Watts; but out of doors is pleasant, too, in the bright frost. If you want a vivid description of winter, turn to the antiquated old words of Gawain Douglas, Bishop of Dunreld; they are true as a photograph.

December! The year draws to a close. That fact makes many thoughts crowd upon us.

The Saxons called this Winter-Month—but after their conversion to Christianity they named it Heligh-Month or Holy-Month. We call the end of the year Yule-tide. Yule is a corruption of Guil. This was the name for the feast of Thor. We feast in December, but not in memory of Mighty Thor. We commemorate the Gentle Shepherd who brought the emblem of love—not the hammer of wrath.

Yes, let us be merry and wise, and keep in December—and all the rest of the year too—those words before us, "Goodwill to All!" We are glad to be able to extend the season's greetings to a much larger circle of readers this year than twelve months ago, and trust that all will enjoy a happy and joyous Christmastide.

THE REALIZATION.

JUST one year ago a dream was unfolded in the editorial columns of *The Fruit Magazine* which attracted some attention and stirred the prophetic fire of a few so-called enthusiasts, but which was ridiculed by others as destined to be quickly forgotten and the dreamer left to manoeuvre the phantom squadrons of his speculative mind, while the general public proceeded to turn the fruitful furrows of practical everyday life. If the reader will turn to page 14 of the December, 1909, number of this magazine, he may be surprised to find that the plan there set forth for the development of a Canadian National Apple Show has been carried out in almost every detail, and that the most sanguine expectations of the promoters have been fully realized in the greatest Apple Show the world has ever seen, which was brought to a close on the evening of November 5th, with the word "*Success*" written across its portals in large letters of golden opinions.

The final reports of the manager, secretary and treasurer, not being ready before this issue goes to press, will be published in our January number.

We claim that the First Canadian National Apple Show was the greatest in the world's history, not only because it was the largest collection of strictly exhibition apples, but because it was the best in quality of exhibits, artistic arrangement, staging, lighting, decorating and general educational value. These features, together with the high-class musical entertainment furnished by the 48th Highlanders Band, and the total absence of side-shows, fakers, and the usual circus features of the ordinary fall fair, gave a dignity and class to the whole affair of which the management may well feel justly proud.

The show was national in every sense of the term, and might with due modesty be designated as the first really National

Apple Show ever held, because there were exhibits present from every apple-growing province in Canada, and the Federal Government not only recognized it by contributing financially towards the expense, but sent an educational exhibit of great value, in charge of a special commissioner.

Notwithstanding extremely disagreeable weather during the entire week, the attendance was good, and the interest increased daily to the end.

The gates were opened to the public promptly at 9 o'clock on the morning of Monday, October 31st, and long before the official opening, which took place at 2.30 in the afternoon, every inch of standing room in the great buildings was occupied, and the spacious galleries surrounding the arena packed to their utmost capacity.

The grand procession started from the Vancouver City Hall at 1:30, and as the platoon of mounted police, followed by the 48th Highlanders, turned the corner on to Hastings street, the assembled crowds burst forth with cheers of delight and enthusiasm, the clamor fairly reaching the height of a tumult. Then followed a long line of automobiles, in which were seated the board of management of the Apple Show, judges, representatives of the Dominion and Provincial Governments, City Council, Board of Trade and many distinguished visitors. Next came the bugle band escorting the Lieutenant-Governor's carriage, who was accompanied by his private secretary, his worship Mayor L. D. Taylor, and the Bishop of Westminster. Following this was another long line of citizens in automobiles and carriages, the band of the 6th Regiment D. C. O. R., boy scouts, the fire department, and many other private equipages. Arriving at the National Apple Show buildings via Hastings, Granville, Nelson and Gilford streets, which were lined with enthusiastic spectators throughout, the speakers of the day made their way to a specially constructed platform at the west end of the great arena.

There were seated with Mr. J. N. Ellis, vice-president of the Apple Show Association, His Honor Lieutenant-Gov-

ernor Paterson, Mr. Musket (the Lieutenant-Governor's private secretary), Bishop De Pencier, Hon. R. McBride, Hon. W. J. Bowser, Mayor Taylor, Mr. H. A. Stone (representing the Board of Trade), Mr. Elliott S. Rowe (secretary of the Vancouver Tourist Association), Mr. Ralph Smith, M. P., Mr. Maxwell Smith (manager of the National Apple Show), Mr. A. E. Lees (chairman of the Park Board), Mr. W. E. Scott (Deputy Minister of Agriculture), Mr. J. S. Thompson (representing the Trades and Labor Council), Mr. J. A. Ruddick (Dominion Dairy Commissioner), and Mr. T. F. Paterson.

Mr. J. N. Ellis presided, and called on the Bishop of Westminster to make the opening invocation, which was very impressively done, Bishop De Pencier's fine voice being heard clearly throughout the building.

MAYOR L. D. TAYLOR.

Mayor L. D. Taylor, in welcoming the visitors on behalf of the city, said it was a great day for the city, the Province and the Dominion, and it was with a feeling of pride that they recalled that the idea of a Canadian National Apple Show was born in the mind of a Vancouver man—(applause)—and that it should have taken a definite form in this city. To his mind it was an expression more than could be uttered in words of Vancouver's recognition of the fertility of the lands adjacent. The West had long been famous for its fruit production. Throughout the world the fame of California was known long ago, and today in British Columbia apple was king. They heard much of Canada as a nation, and in this show was British Columbia's acknowledgment of that sentiment.

"In looking over this show," said the Mayor, "I am less disposed than ever to blame Mother Eve for the apple episode. And I am glad to say that since the inception of this show the apple of discord has not been in evidence. Paris had an easy task in awarding the apple compared with what the judges of this show will have in deciding between so many first-class exhibits."

HON. R. McBRIDE.

Hon. R. McBride, Premier of British Columbia, on rising to welcome the visitors on behalf of the Province, was given a very hearty reception. He said it gave him particular pleasure to assist in the opening of such a magnificent exhibition in the city of Vancouver, because the people of the Province, whether they came from Kootenay or the northwestern sections, always claimed that the city of Vancouver was the great commercial centre of British Columbia, typical of all that enthusiasm and energy that had done so much to build up Western Canada.

"When this Apple Show was first mentioned," said the Premier, "it was acknowledged that the undertaking must be one of great magnitude—for the management. Fancy this Province, which a few years ago was not known as a fruit-growing country, in this year 1910 having the enterprise and courage to launch the first National Apple Show. But those of us who know the country and its possibilities felt sure from the start that the management, with that unbounded faith in the country they have shown, was bound to make this (as Mr. Ellis tells me it is) the greatest show of its kind in the history of the world. (Applause.) When Vancouver undertakes anything she always makes good, and this show is one of the most attractive illustrations of this that could be given to the world at large.

"I am asked to give on behalf of this Province to our friends from abroad a most hearty welcome, and most readily do I undertake that task. I think that in this Province we are regarded as a hospitable people, and I think that the strangers who have come among us will leave with the impression that they have been in the house of friends."

The Premier continued that nothing had been done in the Province which showed what British Columbia was capable of more than the development of fruit-growing. Only a few years ago people in the East had the impression that British Columbia was nothing more than a huge mountainous section. It

was not then considered as a place where fruit could be successfully grown from a commercial standpoint, but nothing was so typical of its potentialities as the development of fruit-growing. Ten years ago unknown as a fruit-growing country; today in competition with all parts of the British Empire carrying off the highest awards. (Applause.) That was enough to show what British Columbia might do in any line of commercial development, when there were the means and the men behind it. Just as they had done in fruit-growing they would do in other lines.

"Before I resume my seat," said the Premier, "there is one name I must mention in this connection. It is that of your fellow-townsmen, Mr. Maxwell Smith—(hear, hear)—to whom great credit is due for the part he has taken in bringing about this exhibition. And I am sure the warmest thanks of the people of this country will be accorded to the man who has done such a noble as well as such a useful task." (Applause.)

HON. W. J. BOWSER

Hon. Mr. Bowser, Acting Minister of Agriculture and Finance, said that while it was with pleasure he had come to take part in opening the show, his pleasure knew no bounds when he arrived in that building and saw the great concourse of visitors and the magnificent display of fruit. The management had brought together an apple show of which any country might be proud.

"I might state," said Hon. Mr. Bowser, "for a few moments the great progress that has been made in fruit-growing in this Province within the past few years. A few years ago the acreage under fruit was very small, but here in 1910 we have 120,000 acres under fruit culture. We have been successful at five Royal Horticultural Shows in London in carrying off the gold medal in competition with the whole British Empire, and these medals will be on exhibition here today. Eight years ago our fruit values were less than \$400,000, and in 1910 they are over \$2,000,000; and after the consumption of fruit in this Province we expect to ship out over a thousand

carloads to the Northwest and other provinces. We have shipped already one carload consigned to the British Isles for exhibition only, and after this show we expect to send another carload for exhibition there. I understand that eleven out of fourteen carloads in this exhibition are from British Columbia.

"We are therefore proud of this, and more than proud that the citizens of Vancouver have given their time and money to bring about an exhibition of this kind, which perhaps the government of the day should have done. And I am more than proud, both as a citizen of Vancouver and a minister of the crown to see this show such a success, and as head of the department of agriculture I am proud indeed to offer my congratulations to the management for the good work they have done." (Applause.)

Mr. Ellis then called on Mr. Maxwell Smith as the man whose work had made such a show possible in Vancouver that day.

MR. MAXWELL SMITH.

Manager Maxwell Smith, who was received with applause, said:

"Some people have to go to the next world before receiving the reward of their labor, but I am sure that the promoters of the First Canadian National Apple Show have their reward in this beautiful array of exhibits and this splendid gathering of those who have come to show their appreciation and interest.

"At first we found many who doubted our ability to carry through the enterprise with any degree of credit to the country, but some of us have faith enough to believe that anything that anybody else can do that is worth doing Canada has a right to undertake. (Applause.) While acknowledging the superiority of no other people on earth, we are always glad to welcome to a friendly contest all who approach us on the basis of a dignified equality, and today we give you the most beautiful and the best Apple Show ever held. (Hear, hear.)

"In this show we have 3,424 exhibits and 194 varieties, not including those of

the Dominion Government and Australia, or the window displays of the city, which have never been equalled, and the exhibitors number 287. We have 12 solid carload exhibits, comprising 7,200 boxes, 79 ten-box displays, comprising 790 boxes, 74 5-box displays, comprising 370 boxes, 734 single-box exhibits and 16 three-box exhibits, comprising 48 boxes, or a grand total of 9,132 boxes, 1,944 plate exhibits, and 407 boxes in pack displays, 6 collections of big apples, 13 entries in the biggest apple contest, 8 freak apples, 6 crab apple displays, 8 district exhibits, 5 limited displays, 119 entries in the apple by-products and 2 photographic displays of orchard scenes, making a grand total of about 20 carloads of exhibits.

"These exhibits are gathered from every apple-growing district in Canada, the neighboring States of Oregon and Washington, and from Tasmania. So that our show is not only national in the truest sense of the term, but international in its character. Time will not permit me to refer in detail to the excellencies of the various districts from which the exhibits are assembled; but I should like to express our appreciation of the Australian exhibit and the educational value of the Dominion Government's display, which is in charge of Mr. J. A. Ruddick.

"Our thanks are especially due, not only to the press of Vancouver and British Columbia in general, who have rendered yeoman service, but to the newspapers and magazines of the whole Dominion, and many of those in the United States, Australia and Great Britain. For substantial financial assistance we are deeply indebted to the Canadian Pacific Railway, the Great Northern Railway, the B. C. Electric Railway, his worship the Mayor and city council of Vancouver, and the citizens of Vancouver, who by private subscription have contributed most of the money necessary to the successful carrying out of this enterprise.

"And we are glad to note that the Dominion Government, while giving us an example of the time-honored tradition that large bodies move slowly, have not failed to climb into the chariot of progress as it rolls swiftly by on the heels of

the prancing steeds of nature and science. (Laughter and applause.) In the scientific utilization of mother earth and God's quickening sunlight we have in this splendid show of the King of Fruits a triumphant exemplification of the innate dignity of honest labor. Right here I have a pleasant duty to perform.

"Some time ago I received from the Natural Resources Security Company, Limited, of this city, a cheque for \$500 with instructions to devote the amount to any department I saw fit, on condition that I did not make the announcement until today. I take pleasure in asking the judges to award this \$500 prize to the best district display. (Applause.)

"As the successful cultivation of the apple is the supreme test of soil and climate, let me say to those seeking a country in which conditions are all that go to make human life pleasant and profitable, seek ye first the kingdom of the apple, and other things needful in the sphere of agriculture will be added unto you. (Laughter.) On behalf of the board of management of the greatest Apple Show, held in the greatest city, in the greatest province, in the greatest Dominion, in the greatest Empire that the world has ever seen—(applause)—I bid you welcome from south of the international border, from across the rolling Atlantic and the broad Pacific, to this fair young nation whose star of future power, wealth and influence is in the ascendant, and is shining forth in the northern sky with ever-increasing lustre and brilliancy. Our every hill and valley is pregnant with a wealth of natural resources, and on this coast, in summer, the earth laughs with fatness, and in winter the very heavens weep for joy. (Loud laughter and applause.)

"I hope you will take full advantage of our hospitality so warmly proffered by his worship the Mayor, thrice welcome to the city of the 'Lions' Gateway,' Vancouver, Chaste Queen of the Golden West, who holds in her right hand a harbor in which all the navies of the British Empire might ride in safety, but which is happily better employed in accommodating a goodly share of the commerce of the world. In her left she holds the business end of the mighty Fraser

River with the greatest salmon fisheries of the world, whose feet are kissed by the ebb and flow of the peaceful waters of the Pacific, and whose smile reflects the glory and splendor of the western sun as he modestly retires behind the rugged profile of Vancouver Island, and whose environs present a panorama of beauty and grandeur which defines the matchless skill and cunning hand of the world's greatest artist to reproduce in miniature." (Applause.)

CHAIRMAN J. N. ELLIS.

Mr. Ellis said that he had intended to make a speech, but after Mr. Maxwell Smith and the other speakers, he (the chairman) thought he had better say nothing, and with a few remarks he called on his honor Lieutenant-Governor Paterson to open the show.

LIEUT.-GOVERNOR PATERSON.

His honor the Lieutenant-Governor said that he felt that any words of commendation from him would be a mere attempt to paint the lily. The exhibition spoke for itself much louder than he could speak for it, nor was it needful for him to speak in commendation of the board of management: their work was spread out before them and spoke for itself. It had already been demonstrated that in British Columbia as a fruit-growing country they had the climate, the soil and the markets, and it only remained for the people to show intending fruit-growers that they could get a reasonable interest on their investment and good returns for their labor, and they would come in. Such an exhibition as this showed what could be done, and must be followed by good results. By virtue of his office as lieutenant-governor of the Province it was a great pleasure to him to declare open the First Canadian National Apple Show.

At this point the band of the 48th Highlanders struck up "God Save the King" and "The Maple Leaf," amidst tremendous enthusiasm, the bugles of the 6th Regiment D. C. O. R. sounded, and the greatest Apple Show in the world's history was a reality.

The great show was brought to an end on Saturday evening, November 5th,

with the final concert of the famous 48th Highlanders Band, which closed with "Auld Lang Syne" and "God Save the King."

Precisely at 11 o'clock Manager Maxwell Smith mounted the platform, and in a few brief words thanking the exhibitors, visitors, the band, and all who had contributed to the success of the undertaking, officially declared the First Canadian National Apple Show closed, which was followed by three ringing cheers and a tiger from the people in the surrounding galleries.

* * *

POMOLOGICAL CONVENTION.

THE Pomological Convention, called at the request of many prominent fruit-growers in the United States and Canada, and under the auspices of the First Canadian National Apple Show, met in the Pender Hall, 804 Pender street, Vancouver, at 10 a. m.

consider and recommend that certain amendments be made to the rules, governing standards of values of certain varieties of apples, of the American Pomological Society.

The chairman gave it as his opinion that it was unfair to establish standards of values of different varieties of apples when compared with each other as grown in any one province or state, and that the highest degree of perfection obtainable in any part of the continent should be the basis of value placed on each particular variety. That is to say, the standard of the Gravenstein should be based on its quality as produced in such districts as the Annapolis Valley in Nova Scotia or the Kootenays in British Columbia; the Fameuse and McIntosh as produced in the neighborhood of Montreal, Quebec; the Baldwin and Northern Spy as produced in the best districts of Ontario, Michigan and New York; and the Jonathan, the Spitzenberg, the Yel-

low Newtown, the Winesap, the Grimes Golden, etc., as produced in the best irrigated districts of British Columbia, Washington and Oregon. If this were done fruit-growers would be encouraged to specialize in those varieties of high commercial value which could be produced to the highest degree of perfection in their respective districts.

Many prominent fruit-growers took part in the very practical discussion which followed, including Professor H. E. Van Deman, of Washington, D. C., Professor F. C. Sears, of Amherst, Mass., Professor G. E. Rowe, of Michigan, and Professor Wilbur K. Newell, of Oregon. After a very interesting discussion, Messrs. G. E. Rowe, of Michigan, Martin Burrell, of British Columbia, and W. K. Newell, of Oregon, were appointed a committee to draft a resolution in accordance with the expressed opinions of the convention. The following is the committee's report:

"In the opinion of your committee there are many changes that should be made in the rating of varieties given by the American Pomological Society, and we recommend that the next meeting of the American Pomological Society appoint a new committee to revise the rating, making a double rating, basing it upon quality and commercial value as found in the localities or districts where the varieties are grown to the highest state of perfection. We also recommend that each apple-growing district on the continent that has a local society be requested to make recommendations regarding ratings of apples grown to perfection in their respective districts to the American Pomological Society at its next meeting, in order that the new committee that will undoubtedly be appointed may have proper data at hand to assist them in their very important work.

"Your committee also recommend that amongst other changes should be the following: That McIntosh Red be raised to 8-9, Winesap to 9, Northern Spy to 10, and Baldwin to 6-7.

"(Signed)

"G. E. ROWE,
"MARTIN BURRELL,
"W. K. NEWELL."

the prancing steeds of nature and science. (Laughter and applause.) In the scientific utilization of mother earth and God's quickening sunlight we have in this splendid show of the King of Fruits a triumphant exemplification of the innate dignity of honest labor. Right here I have a pleasant duty to perform.

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LIEUT.-GOVERNOR PATERSON.

TYPOGRAPHICAL ERROR

Vol. 2, No. 3.

On page 218, second column and the ninth line, the word *defines* should be *defies*. The line should read: "beauty and grandeur which *defies* the"

self. It had already been demonstrated that in British Columbia as a fruit-growing country they had the climate, the soil and the markets, and it only remained for the people to show intending fruit-growers that they could get a reasonable interest on their investment and good returns for their labor, and they would come in. Such an exhibition as this showed what could be done, and must be followed by good results. By virtue of his office as lieutenant-governor of the Province it was a great pleasure to him to declare open the First Canadian National Apple Show.

At this point the band of the 48th Highlanders struck up "God Save the King" and "The Maple Leaf," amidst tremendous enthusiasm, the bugles of the 6th Regiment D. C. O. R. sounded, and the greatest Apple Show in the world's history was a reality.

The great show was brought to an end on Saturday evening, November 5th,

with the final concert of the famous 48th Highlanders Band, which closed with "Auld Lang Syne" and "God Save the King."

Precisely at 11 o'clock Manager Maxwell Smith mounted the platform, and in a few brief words thanking the exhibitors, visitors, the band, and all who had contributed to the success of the undertaking, officially declared the First Canadian National Apple Show closed, which was followed by three ringing cheers and a tiger from the people in the surrounding galleries.

* * *

POMOLOGICAL CONVENTION.

THE Pomological Convention, called at the request of many prominent fruit-growers in the United States and Canada, and under the auspices of the First Canadian National Apple Show, met in the Pender Hall, 804 Pender street, Vancouver, at 10 a. m. on Wednesday, Nov. 2nd, there being present upwards of one hundred delegates from many points in the fruit-growing districts of the American continent.

Mr. Maxwell Smith, on motion, duly seconded, was elected chairman of the convention, and briefly recited the object of the meeting as advertised in *The Fruit Magazine*, viz., to consider and recommend that certain amendments be made to the rules, governing standards of values of certain varieties of apples, of the American Pomological Society.

The chairman gave it as his opinion that it was unfair to establish standards of values of different varieties of apples when compared with each other as grown in any one province or state, and that the highest degree of perfection obtainable in any part of the continent should be the basis of value placed on each particular variety. That is to say, the standard of the Gravenstein should be based on its quality as produced in such districts as the Annapolis Valley in Nova Scotia or the Kootenays in British Columbia; the Fameuse and McIntosh as produced in the neighborhood of Montreal, Quebec; the Baldwin and Northern Spy as produced in the best districts of Ontario, Michigan and New York; and the Jonathan, the Spitzenberg, the Yel-

low Newtown, the Winesap, the Grimes Golden, etc., as produced in the best irrigated districts of British Columbia, Washington and Oregon. If this were done fruit-growers would be encouraged to specialize in those varieties of high commercial value which could be produced to the highest degree of perfection in their respective districts.

Many prominent fruit-growers took part in the very practical discussion which followed, including Professor H. E. Van Deman, of Washington, D. C., Professor F. C. Sears, of Amherst, Mass., Professor G. E. Rowe, of Michigan, and Professor Wilbur K. Newell, of Oregon. After a very interesting discussion, Messrs. G. E. Rowe, of Michigan, Martin Burrell, of British Columbia, and W. K. Newell, of Oregon, were appointed a committee to draft a resolution in accordance with the expressed opinions of the convention. The following is the committee's report:

"In the opinion of your committee there are many changes that should be made in the rating of varieties given by the American Pomological Society, and we recommend that the next meeting of the American Pomological Society appoint a new committee to revise the rating, making a double rating, basing it upon quality and commercial value as found in the localities or districts where the varieties are grown to the highest state of perfection. We also recommend that each apple-growing district on the continent that has a local society be requested to make recommendations regarding ratings of apples grown to perfection in their respective districts to the American Pomological Society at its next meeting, in order that the new committee that will undoubtedly be appointed may have proper data at hand to assist them in their very important work.

"Your committee also recommend that amongst other changes should be the following: That McIntosh Red be raised to 8-9, Winesap to 9, Northern Spy to 10, and Baldwin to 6-7.

"(Signed)

"G. E. ROWE,

"MARTIN BURRELL,

"W. K. NEWELL."

Doukhobors in British Columbia

A FEW days ago John Sherbinin, the manager of the Doukhobor colonies in British Columbia, consented to be interviewed, and told something of the progress of their various colonies. Quite recently 800 more Doukhobors came to join their brethren already in the Province.

"About two hundred will go to Grand Forks," said Mr. Sherbinin, "and the remainder will go to Brilliant. At the latter settlement we are putting up a large number of double tents for their immediate accommodation. Twenty frame houses have been completed there this summer, the lumber for which was sawn at our settlers' mill, and we now have forty carpenters at work upon the houses. All will be comfortably housed by the time the snow flies. Brilliant is our main colony, that at Grand Forks numbering four hundred and fifty persons. There are about six thousand members of the Doukhobor society in Canada, and the arrival of this last con-

tingent leaves about 4,000 Doukhobors in Saskatchewan.

"Our total land holdings in British Columbia number about ten thousand acres. There are 2,900 acres at Brilliant, 2,500 acres at Pass Creek, 1,100 acres at Slocan Junction, and 3,500 acres at Grand Forks. At Brilliant we have 600 acres cleared, 250 acres being planted to fruit, while 50,000 trees have been ordered for spring planting. We have fifty colonies of bees, which are doing very well."

The foregoing statement hardly gives an adequate idea of what the Doukhobors are really doing. The writer recently had the privilege of going over their colony at Brilliant and was amazed to see the progress that had been made. Land that was all heavy timber a year ago is now clean and as free from root or stone as a prairie farm that had been cropped for years. Everywhere there were bustle and industry, and when the trees already planted begin to bear they will have a garden spot.—*Farmers' Advocate.*

Caledonian Caution

My Flora is a canny Scot—
Too canny, truth to tell—
For though I'd have her share my lot,
She'll no commit hersel'.
I said, "Will you my sweetheart be?"
She answered, "Hoots! You men!"
I pressed her, "Do you care for me?"
She said, "I dinna ken."
"What! Don't you know your mind?" I
cried.
She said, "It's warm the day."
I asked her, "Will you be my bride?"
She said, "I couldna say."

"Come, lassie, shall it be this spring?"
She cried, "You're varra free."
"Then tell me, may I buy the ring?"
"Man! Please yoursel'," says she.

Before the chancel steps we stood
St. Giles' Kirk intil,
The parson asked me if I would;
Of course I said, "I will."

But when it came to Flo's reply,
The nearest that she'd go
Was just a murmur cautiously,
"I wouldna say I'll no."

London "Truth"

Sunnyside, B. C.

FRUIT-GROWING is rapidly forging to the front as a staple industry of British Columbia, and is quite certain in a few years to rival mining, lumbering and stock-raising for the first position.

Subject to the due observance of obvious and necessary precautions, it is an occupation which offers the maximum of profit with the minimum of risk, besides being the most pleasant and the safest business in the world.

Today that portion of southern British Columbia known as the "dry belt" is conceded to be the finest fruit-growing country on the continent, and no other district is more peculiarly adapted for the success of this industry than is the South Thompson Valley, in which Sunnyside is located.

Here fruit will not only produce in abundance, but the quality is equal to any and superior to most. The different varieties which are successfully cultivated here will prove, in comparison with those produced elsewhere, to be of better color, flavor and size. Apples, peaches, pears, plums, cherries, grapes, apricots and nectarines are prolific bearers, mature rapidly and attain perfection in this district.

For six consecutive years gold medals were awarded exhibits from this district by the Royal Horticultural Societies of England and Scotland, proving conclusively that British Columbia has secured a prominent place in the British market, heretofore held in undisputed control by foreign growers.

These honors abroad were eclipsed in a measure by the victory achieved at the annual convention of the Northwest Fruit-growers' Association, held at Vancouver in 1907, when this district won two first, one second and three third prizes in competition with fruit from the older and better known districts of Washington and Oregon.

It has been proven beyond further question that the soil most strikingly suited to the highest state of fruit culture is of the light sandy loam or vol-

canic ash variety, and wherever this exists, all other conditions being equal, good trees and choice fruit will result.

The soil at Sunnyside is a rich volcanic ash, free from alkali and of great depth. The total absence of hard pan or bed rock and the gentle slope of the surface render drainage perfect.

Bordering on the banks of the South Thompson River, directly on the main line of the C. P. R., Sunnyside has little to desire in this important feature of the fruit-growing industry.

With both rail and water facilities to serve this favored region with transportation, and hungry markets within short distance in every direction, it takes but little prophetic vision to foresee a remarkable degree of prosperity for the people who are sagacious enough to select this district as their home.

The climate of the district is dry the entire year, the average rainfall scarcely ever exceeding one and one-quarter inches per month.

The snowfall is slight and the temperature never too low for comfort and health. Early frosts are conspicuous only by their absence. This fact cannot be too highly estimated, as frost in the growing season is the deadly foe to the horticulturist, and is more insidious in its effect upon trees than any insect that ever ravaged an orchard.

Sunnyside will be supplied with water for irrigation purposes from a complete and up-to-date irrigation system. A series of pipe lines will cover the entire district, and water will be conveyed by gravity to each and every tract.

The salubrious climate, the beauty of the earth, the freedom and vigor of living an outdoor life, and the stimulus of a growing civilization are conducive to creative work and to the nourishment of all that is best in human nature. In our optimistic, Western hopefulness and gladness, surely no trace of selfishness can be held against us, for irresistibly, it seems, we must call aloud to all who listen to come and share with us these rarest of Nature's gifts.

A Romance

of the

First Canadian Apple Show

Written for "The Fruit Magazine" by J. Francis Bursill.

Ah, here's our car! Good-night, Ned.

Next Sunday—now, don't forget—

We shall surely expect you—early.

Yes, whether it's fine or wet!

Be sure that you bring Nelly.

Good-night! once more, old chap:

We shall see you again on Sunday,

And mind Nelly brings a warm wrap.

Ah, now we're off! Yes, Mary,

Ned is my dear old chum.

We shall see him again on Sunday,

For he and Nell's sure to come.

He was always quiet and steady,

And loved to his home to stick..

Why, I wouldn't have missed that Apple
Show

For a diamond as big as a brick.

To think we should chance to meet him:

I thought I had lost him for life,

But the Apple Show brought us together,
And, what's more, it's found Ned a
wife.

Sit close here; I'll whisper Ned's story.

You'll say that it's quite a romance,

And, what's more, there's Providence in
it;

Such things, they don't happen—by
chance.

Ned and I came from the Old Country.

There, he worked in a shop by my
side:

I saw that he'd some secret trouble—

Some grief the poor lad couldn't hide.

From his work he'd go straight to his
lodging—

His only companion his fiddle.

His manner—well, there, it quite fogged
me,

But I soon got a clue to the riddle.

Ned loved a young, sweet, pretty girl—

A girl who was good, fair and sunny.

Ned's people, they were well-to-do,

And Nelly's folk had money.

All seemed quite gay, when Ned's old
dad

Went in for some rash speculation,

Which ended (as it often does)

In downright and sheer ruination.

Then Nelly's father told them both

That they should never wed.

He'd give his child to no man

Who must toil for daily bread.

Ned had to work, so bade Good-bye

To Nelly, fondly thinking

This Golden West might give him a
chance

And keep his hopes from sinking.

He came out here, heard nought of
Nell—

She didn't even write;

To forget the girl he faithless thought

He strove with all his might.

And here in big, broad Canada,

For work and luck he'd seek,

Till they learned his worth in an engine-
shop:

Well—of that you heard him speak.

It may seem rather funny,

But it's true, I do declare,

That Nell (who I knew from a child)

Should superstitions share

With Ned, who met her years before

At a fruit and fine flower show;

So 'twas not strange when he's out here

To the Apple Show he'd go.

And strange, but true, Nell's out here
too—

Of that I had no notion.
I never dreamed that she, like us,
Had come across the ocean.
To the Apple Show she, too, must go,
By olden memories led,
And there, I tell you it is so,
She met, face to face with Ned.

Unchanged her face, but paler,
Ned says. Some lines of care
Have left their trace upon her brow—
That brow so pure and fair.
She is a nurse. She told her tale
Of how her father's pride
Had kept her close, her letters stopped,
And how at length he'd died.

Then she came out to Canada,
A lonely, sorrowing maid.
She told him how her father's pride
At length was doomed to fade.
He died in debt, for all his pomp,
And now to earn her bread
She was a nurse in hospital,
And still she loved her Ned.

Her cheek was pale, for grief and work
Had surely left their trace.
But now, as she looked up at Ned,
What joy lit up her face.
You'll guess the rest. In three short
months
Sweet Nell he'll make his wife,
And Ned, you know, he is well fixed—
Success attends his life.

Those loving hearts, through this cold
world,
Have long been kept apart;
They might have gone down to their
graves
With sorrow at each heart.
But in that glorious Apple Show
They met—and soul to soul
They'll travel life together now,
With Heaven for their goal.

Then thank God for the Apple Show,
That opened wide its door,
And thank God for a nurse like Nell
To help the sick and poor!
The Apple Show—yes, I'll be there
When it comes back again.
And Heaven bless the men who dare
To work—for country, not for gain.

The Critic

A mud-turtle sat on a stone in the sun,
And blinked in a slow, stupid way;
A vain little fly
Came loitering by,
He stopped on that same rock to say:
"You're the ugliest creature that ever I
saw;
You are clumsy, and stupid, and slow,
And just how you manage a living at all
Is a thing I would much like to know."

But the little mud-turtle spoke never a
word
As he sat in the sun on the stone;
He wearily blinked,
He thought as he winked,
That a wise fly would let him alone.
But the fly had grown proud of his
power to torment,
And he buzzed at the mud-turtle's
head,
Till the turtle at last gave one short little
snap,

It is really too bad that the fly never
knew
That the turtle was wiser than he;
For a creature that thinks
As it winks and it blinks
May a dangerous enemy be.
And because one can clatter, and buzz,
and annoy,
'Tis no proof he is clever or wise,
He may do no more good than to serve
as the food
For the one whom he feigns to despise.

—Bohemian.

British Columbia Fruit Again Wins

WRITING under date Nov. 3 to Mr. W. E. Scott, the deputy minister of agriculture for British Columbia, Dr. J. O. Orr, the secretary and manager of the Toronto Exhibition, pays an especially high compliment to the excellence of British Columbia fruit. He says in this communication: "I beg to advise you that your exhibit has been awarded

a gold medal. It was one of the finest fruit exhibits that has ever been made on this continent; no other exhibit in our provincial government's buildings attracted such attention as did yours. The number of visitors from England, who were especially directed to your exhibit, were astonished that such fruit could be produced in British Columbia."



VANCOUVER TRUST COMPANY'S NEW BUILDING

Premium Awards: First Canadian National Apple Show

CLASS 1—CARLOAD.

Northern Spy.

1. Coldstream Estate Co., Limited,
Vernon, B. C.\$500

Spitzenberg.

1. Sawyer Land Company, Sunnyside,
Wash.\$500

Yellow Newtown.

1. Medford Commercial Club, Medford,
Ore. (grown by E. Renshaw) ..\$500
2. C. Starcher, North Yakima, Wash... 250

Grimes Golden.

1. Sawyer Land Company, Sunnyside,
Wash.\$500

King of Tompkins.

1. Victoria Fruit-growers' Exchange ..\$500

Mixed.

1. Summerland, B. C., Agricultural
Society\$500
2. Vernon, B. C., Board of Trade 250
3. Mike Horan, Wenatchee, Wash. 100

Jonathan.

1. Kelowna, B. C., Board of Trade\$500

SWEEPSTAKES.

1. Kelowna, B. C., Board of Trade, \$1,000
and \$100 solid gold medal.
2. Summerland, B. C., Agricultural Society,
5 acres of fruit land, valued at \$750, by
A. J. Smythe, Peachcliff, Okanagan
Falls, B. C., and \$50 solid silver gold-
embossed medal.
3. Medford, Ore., Commercial Club, \$25
solid silver medal.

CLASS 2—DISTRICT DISPLAY.

1. Kelowna, B. C., Board of Trade, \$500
cash and \$100 solid gold medal.
2. Grand Forks, B. C., Board of Trade,
\$250 cash and solid silver gold-emboss-
ed medal.
3. Vernon, B. C., Board of Trade, \$100 cash
and \$25 solid silver medal.
4. W. H. Armstrong, Keremeos, B. C., \$50
cash and \$10 bronze medal.
5. J. E. Lacey, Salmon Arm, B. C., \$25 cash
and diploma.

CLASS 3—TEN-BOX.

Northern Spy.

1. F. R. E. De Hart, Kelowna, B. C...\$100
2. Coldstream Estate Co., Limited, Ver-
non, B. C. 50
3. R. H. Fortune, Salmon Arm, B. C. .. 25

Gravenstein.

1. Doyle & MacDonald, Willow Point,
B. C.\$100
2. Van Sant & Whipple, Olga, Wash... 50
3. R. Owen, Mt. Lehman, B. C. 25

Fameuse.

1. Quebec Pomological Society\$100

Spitzenberg.

1. C. L. Green, Wenatchee, Wash. ...\$100
2. C. J. Thomson, Summerland, B. C... 50
3. F. R. E. De Hart, Kelowna, B. C. .. 25

Yellow Newtown.

1. C. L. Green, Wenatchee, Wash., 250 Yel-
low Newtown 1-year grafts, 4 feet and
up, from Washington Nurseries Co.,
Toppenish, Wash., valued \$62.50, and
\$50 cash.
2. F. R. E. De Hart, Kelowna, B. C. .. \$50
3. C. Starcher, North Yakima, Wash... 25

Grimes Golden.

1. F. R. E. De Hart, Kelowna, B. C. ...\$100
2. Robt. Lawson, Grand Forks, B. C. .. 50
3. Mrs. John Smith, Spence's Bridge,
B. C. 25

King of Tompkins.

1. Thos. G. Earle, Lytton, B. C.\$100
2. R. H. Fortune, Salmon Arm, B. C... 50
3. Jas. Spiers, West Kootenay 25

McIntosh.

1. F. R. E. De Hart, Kelowna, B. C. ...\$100
2. C. L. Green, Wenatchee, Wash. ... 50
3. Coldstream Estate Company, Ver-
non, B. C. 25

Jonathan.

1. John Conlin, Kelowna, B. C., 50 Royal
Anne, 25 Bing and 25 Lambert cherry
trees, and 50 Moor Park apricot trees
from Quaker Nurseries, Salem, Ore.,
valued at \$60, and \$50 cash.
2. T. J. Black, Wenatchee, Wash. \$50
3. F. R. E. De Hart, Kelowna, B. C. 25

Cox's Orange Pippin.

1. F. R. E. De Hart, Kelowna, B. C. ...\$100
2. West Kootenay 50

Winesap.

1. Tedford Bros, Wenatchee, Wash. ...\$100
2. H. L. Tedford, Wenatchee, Wash. .. 50
3. Yakima County (Wash.) Horticultu-
ral Union 25

CLASS 4—FIVE-BOX.**Delicious.**

1. T. J. Black, Wenatchee, Wash. \$50
2. H. L. Tedford, Wenatchee, Wash. ... 25

Blenheim.

1. J. T. Bealby, Nelson, B. C. \$50

Wagener.

1. Yakima County Horticultural Union, North Yakima, Wash., 100 Royal Anne cherry trees (Carlton Nursery Co., Carlton, Ore.), value \$35, and \$25 cash.
2. O. P. Appleton, West Kootenay \$25
3. O. P. Appleton, West Kootenay 10

Rome Beauty.

1. C. L. Green, Wenatchee, Wash., 250 Rome Beauty trees (Milton Nursery Co., Milton, Ore.), value \$62.50.

Wealthy.

1. R. H. Fortune, Salmon Arm, B. C., 200 Jonathan apple trees (Vineland Nurseries Co., Clarkston, Wash.), value \$50, and \$12.50 cash.
2. F. D. Nicholson, Salmon Arm, B. C. \$25
3. Coldstream Estate Co., Vernon, B. C. 10

Black Ben.

1. Wm. Tedford, Wenatchee, Wash. .. \$50

Arkansas Black.

1. Tedford Bros., Wenatchee, Wash... \$50
2. C. L. Green, Wenatchee, Wash. 25
3. Yakima County Horticultural Union, North Yakima, Wash. 10

Rhode Island Greening.

1. C. L. Green, Wenatchee, Wash. \$50
2. W. Green, Wenatchee, Wash. 25
3. Jas. Rooke, Grand Forks, B. C. 10

Ontario.

- 1 Robert Lawson, Grand Forks, B. C. \$50

Banana.

1. Wm. Tedford, Wenatchee, Wash.... \$50
2. R. H. Fortune, Salmon Arm, B. C. 25
3. F. R. E. De Hart, Kelowna, B. C. .. 10

White Winter Pearmain.

1. Wm. Tedford, Wenatchee, Wash. .. \$50
2. John Scott, Wenatchee, Wash. 25
3. F. R. E. De Hart, Kelowna, B. C. .. 10

Stayman.

1. T. J. Black, Wenatchee, Wash. \$50
2. H. L. Tedford, Wenatchee, Wash. .. 25

Baldwin.

1. Robt. Lawson, Grand Forks, B. C., 75 pear trees, standard varieties (Capital City Nursery Co., Salem, Ore.), value \$45, and \$20 cash.
2. Mrs. Jas. Rooke, Grand Forks, B. C. \$25
3. F. R. E. De Hart, Kelowna, B. C. .. 10

Yellow Bellflower.

1. J. D. Housberger, Grand Forks, B. C., 50 Franquette walnut trees (Capital City Nursery Co., Salem, Ore.), value \$75.
2. J. T. Bealby, Nelson, B. C. \$25
3. W. H. Armstrong, Keremeos, B. C. 10

Mammoth Black Twig.

1. C. L. Green, Wenatchee, Wash, 75 plum trees, standard varieties (Capital City Nursery Co., Salem, Ore.), value \$45, and \$20 cash.
2. Robt. Lawson, Grand Forks, B. C. .. 25
3. F. R. E. De Hart, Kelowna, B. C... 10

King David.

1. Tedford Bros., Wenatchee, Wash., choice of any nursery stock to value \$50 (Albany Nurseries, Albany, Ore.), and \$15 cash.

Red Gravenstein.

1. Van Sant & Whipple, Olga, Wash. \$50

Hubbardston's Nunsuch.

1. F. R. E. De Hart, Kelowna, B. C. .. \$50
2. Miss K. Conlin, Kelowna, B. C. 25

CLASS 5—SINGLE-BOX.**Mammoth Black Twig.**

1. Tedford Bros., Wenatchee, Wash. .. \$25
2. C. L. Green, Wenatchee, Wash. 15
3. Wm. Green, Wenatchee, Wash. 5

King David.

1. T. J. Black, Wenatchee, Wash. \$25
2. C. L. Green, Wenatchee, Wash. 15
3. Tedford Bros., Wenatchee, Wash. .. 5

Snow.

1. Jas. Rooke, Grand Forks, B. C. \$25
2. F. R. E. De Hart, Kelowna, B. C. .. 15
3. James Johnstone, Nelson, B. C. 5

Yellow Newtown.

1. Tedford Bros., Wenatchee, Wash., 100 Yellow Newtown trees (Oregon Nursery Co., Orenco, Ore.), value \$25, and \$10 cash.
2. C. L. Green, Wenatchee, Wash. \$15
3. F. R. E. De Hart, Kelowna, B. C. .. 5

Black Ben or Gano.

1. Tedford Bros., Wenatchee, Wash. .. \$25
2. C. L. Green, Wenatchee, Wash. 15
3. R. H. Fortune, Salmon Arm, B. C. .. 5

Blenheim.

1. J. T. Bealby, Nelson, B. C. \$25
2. Victoria, B. C., Fruit-growers' Exchange 15
3. G. & F. Scott, Ganges Harbor, Salt Spring Island, B. C. 5

McIntosh.

1. Will R. Bartlett, Summerland, B. C., 100 McIntosh Red trees (Oregon Nursery Co., Orenco, Ore.), value \$25, and \$10 cash.
2. C. L. Green, Wenatchee, Wash. \$15
3. Alex. Stewart, Summerland, B. C. .. 5

Wagener.

1. O. B. Appleton, West Kootenay \$25
2. C. L. Green, Wenatchee, Wash. 15
3. Jas. Rooke, Grand Forks, B. C. 5

Ortley.

1. Tedford Bros., Wenatchee, Wash. .. \$25
2. T. J. Black, Wenatchee, Wash. 15
3. C. L. Green, Wenatchee, Wash. 5

Lady.

1. Tedford Bros., Wenatchee, Wash. .. \$25
2. Tedford Bros., Wenatchee, Wash. 15
3. F. R. E. De Hart, Kelowna, B. C. .. 5

Arkansas Black.

1. T. J. Black, Wenatchee, Wash. \$25
2. Tedford Bros., Wenatchee, Wash. .. 15
3. C. L. Green, Wenatchee, Wash. 5

Delicious.

1. C. L. Green, Wenatchee, Wash. \$25
2. Tedford Bros., Wenatchee, Wash. .. 15
3. F. R. E. De Hart, Kelowna, B. C. .. 5

Ribston Pippin.

1. C. L. Green, Wenatchee, Wash. \$25
2. Wm. Green, Wenatchee, Wash. 15

Stayman.

1. C. L. Green, Wenatchee, Wash., 100 McIntosh Red apple trees (Crescent Nursery Co., Council Bluffs, Iowa), value \$25, and \$10 cash.
2. T. J. Black, Wenatchee, Wash. 15
3. L. A. Taylor, Wenatchee, Wash. 5

Jonathan.

1. Tedford Bros., Wenatchee, Wash., 100 Jonathan apple trees (Layritz Nursery Co., Victoria, B. C.), value \$25, and \$10 cash.
2. John Conlin, Kelowna, B. C. 15
3. C. L. Green, Wenatchee, Wash. 5

Alexander.

1. J. T. Bealby, Nelson, B. C. \$25
2. Jas Johnstone, Nelson, B. C. 15

Mann.

1. Tedford Bros., Wenatchee, Wash. .. \$25
2. T. J. Black, Wenatchee, Wash. 15
3. Miss K. Conlin, Kelowna, B. C. 5

Ribston.

1. Alex. Stewart, Summerland, B. C. .. \$25
2. F. R. E. De Hart, Kelowna, B. C. .. 15
3. R. H. Fortune, Salmon Arm, B. C. .. 5

Ontario.

1. Doyle & MacDonald, Willow Point, B. C. \$25
2. J. T. Bealby, Nelson, B. C. 15
3. W. Rutherford, Nelson, B. C. 5

Wealthy.

1. Muir Stewart, Summerland, B. C., 100 E. Spitzenberg apple trees (Fraser Valley Nursery Co., Ltd., Aldergrove, B. C.), value \$25, and \$10 cash.
2. C. L. Green, Wenatchee, Wash. \$15
3. W. E. Meek, Salmon Arm, B. C. 5

Canada Red.

1. H. H. Armstrong, Keremeos, B. C. \$25
2. Doyle & MacDonald, Willow Point, B. C. 15
3. W. H. Armstrong, Keremeos, B. C. 5

Ben Davis.

1. Tedford Bros., Wenatchee, Wash. .. \$25
2. T. J. Black, Wenatchee, Wash. 15
3. C. L. Green, Wenatchee, Wash. 5

White Winter Pearmain.

1. C. L. Green, Wenatchee, Wash. \$25
2. Wm. Green, Wenatchee, Wash. 15
3. Yakima County Horticultural Union.. 5

Winter Banana.

1. Tedford Bros., Wenatchee, Wash., 100 Wealthy apple trees (Fraser Valley Nurseries, Ltd., Aldergrove, B. C.), value \$25, and \$10 cash.
2. R. H. Fortune, Salmon Arm, B. C. \$15
3. Chas. J. Thomson, Summerland, B. C. 5

Hubbardston's Nunsuch.

1. F. R. E. De Hart, Kelowna, B. C. .. \$25
2. Miss K. Conlin, Kelowna, B. C. 15

Yellow Bellflower.

1. Doyle & MacDonald, Willow Point, B. C. \$25
2. C. L. Green, Wenatchee, Wash. 15
3. Tedford Bros., Wenatchee, Wash. .. 5

Blue Pearmain.

1. J. D. Honsberger, Grand Forks, B. C., 100 peach trees, standard variety (Capital City Nursery Co., Salem, Ore.), value \$35.
2. M. H. Wilkinson, Hagans, South Saanich, B. C. 15
3. Harry Allberry, Hagans, South Saanich, B. C. 5

Hoover.

1. T. J. Black, Wenatchee, Wash. \$25
2. Tedford Bros., Wenatchee, Wash. .. 15
3. C. L. Green, Wenatchee, Wash. 5

Northern Spy.

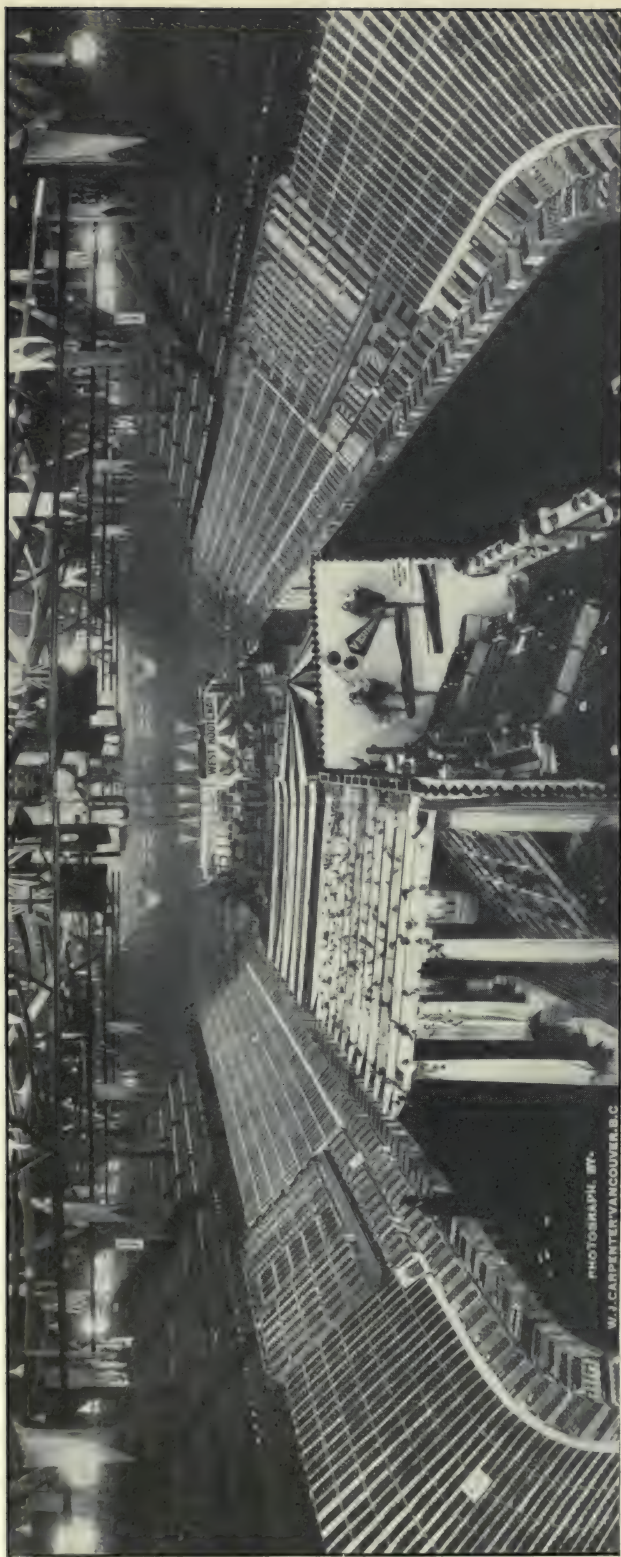
1. F. R. E. De Hart, Kelowna, B. C., 100 Rome Beauty apple trees (Fraser Valley Nurseries, Ltd., Aldergrove, B. C.), value \$25, and \$10 cash.
2. J. D. Honsberger, Grand Forks, B. C., \$15
3. Jas. Gartrell, Summerland, B. C.... 5

Maiden Blush.

1. C. L. Green, Wenatchee, Wash. \$25

Rome Beauty.

1. C. L. Green, Wenatchee, Wash., 50 Montmorency cherry trees (F. W. Meneray, Crescent Nursery Co., Council Bluffs, Iowa), value \$17.50, and \$17.50 cash.
2. Tedford Bros., Wenatchee, Wash. .. \$15
3. T. J. Black, Wenatchee, Wash. 5



THE ARENA BY DAYLIGHT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by W. J. Carpenter, Vancouver

PHOTOGRAPH BY
W. J. CARPENTER-VANCOUVER, B.C.

Cox's Orange Pippin.

1. Alex. Stewart, Summerland, B. C., 100 Cox's Orange Pippin trees (Layritz Nursery Co., Victoria, B. C.), value \$35.
2. F. R. E. De Hart, Kelowna, B. C. .. \$15
3. F. R. E. De Hart, Kelowna, B. C. .. 5

King of Tompkins.

1. C. L. Green, Wenatchee, Wash., 100 King of Tompkins trees (Layritz Nursery Co., Victoria, B. C.), value \$25 and \$10 cash.
2. R. H. Fortune, Salmon Arm, B. C. \$15
3. R. H. Fortune, Salmon Arm, B. C. 5

Spitzenberg.

1. Tedford Bros., Wenatchee, Wash., 100 Esopus Spitzenberg trees (Oregon Nursery Co., Orenco, Ore.), value \$25, and \$10 cash.
2. C. L. Green, Wenatchee, Wash. \$15
3. Yakima County Horticultural Union.. 5

Gravenstein.

1. J. T. Bealby, Nelson, B. C. \$25
2. Victoria, B. C., Fruit-growers' Exchange
3. J. A. Coatham, Sardis, B. C. 5

Grimes Golden.

1. Tedford Bros., Wenatchee, Wash., 100 Winter Banana apple trees (Fraser Valley Nursery, Ltd., Aldergrove, B. C.), value \$25, and \$10 cash.
2. F. R. E. De Hart, Kelowna, B. C. .. \$15
3. J. T. Bealby, Nelson, B. C. 5

Winesap.

1. T. J. Black, Wenatchee, Wash. \$25
2. Tedford Bros., Wenatchee, Wash. .. 15
3. Yakima County Horticultural Union 5

Rhode Island Greening.

1. C. L. Green, Wenatchee, Wash. \$25
2. Jas. Gaskell, Summerland, B. C. 15
3. R. H. Fortune, Salmon Arm, B. C. 5

Baldwin.

1. Tedford Bros., Wenatchee, Wash., 50 Royal Anne cherry trees (Lafayette Nursery Co., Lafayette, Ore.), value \$17.50, and cash \$17.50.
2. C. L. Green, Wenatchee, Wash. \$15
3. F. R. E. De Hart, Kelowna, B. C. 5

McMahon White.

1. Doyle & MacDonald, Willow Point, B. C. \$25

Rambo (Extra).

- H. Ingalls, Keremeos, B. C. Diploma

Golden Russet (N. Y.).

- H. S. Fanquier, West Kootenay .. Diploma

Stark.

- C. M. Tripp, West Kootenay Diploma

Fallawater.

- H. Ingalls, Keremeos, B. C. Diploma

CLASS 6—PLATE DISPLAY.**American Beauty.**

1. J. T. Black, Wenatchee, Wash. \$3
2. J. T. Black, Wenatchee, Wash. 2

Arkansas Beauty.

1. R. H. Fortune, Salmon Arm, B. C. \$3
2. R. H. Fortune, Salmon Arm, B. C. 2

Alexander.

1. J. T. Bealby, Nelson, B. C. \$3
2. A. Coomber, West Kootenay 2

British Columbia.

1. B. MacDonald, Kelowna, B. C. \$3
2. B. MacDonald, Kelowna, B. C. 2

Bailey Sweet.

1. J. Conlin, Kelowna, B. C. \$3
2. W. Rutherford, Nelson, B. C. 2

Ben Hur.

1. J. T. Black, Wenatchee, Wash. ... \$3
2. Tedford Bros., Wenatchee, Wash. .. 2

Baxter.

1. W. McGuire, West Kootenay \$3
2. E. J. R. Watson, West Kootenay .. 2

Cox's Orange Pippin.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. J. D. Godwin, Vernon, B. C. 2

Baldwin.

1. Tedford Bros., Wenatchee, Wash. ... \$3
2. F. R. E. De Hart, Kelowna, B. C. ... 2

Bietigheimer.

1. F. R. E. De Hart, Kelowna, B. C. ... \$3

Bismarck.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

Canada Baldwin.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. R. H. Parsons, Vernon, B. C. 2

Cooper's Market.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

Cabashea.

1. L. D. Campbell, West Kootenay ... \$3
2. J. Hyslop, West Kootenay 2

Apple of Commerce.

1. Tedford Bros., Wenatchee, Wash. ... \$3
2. C. L. Green, Wenatchee, Wash. 2

Canada Reinette.

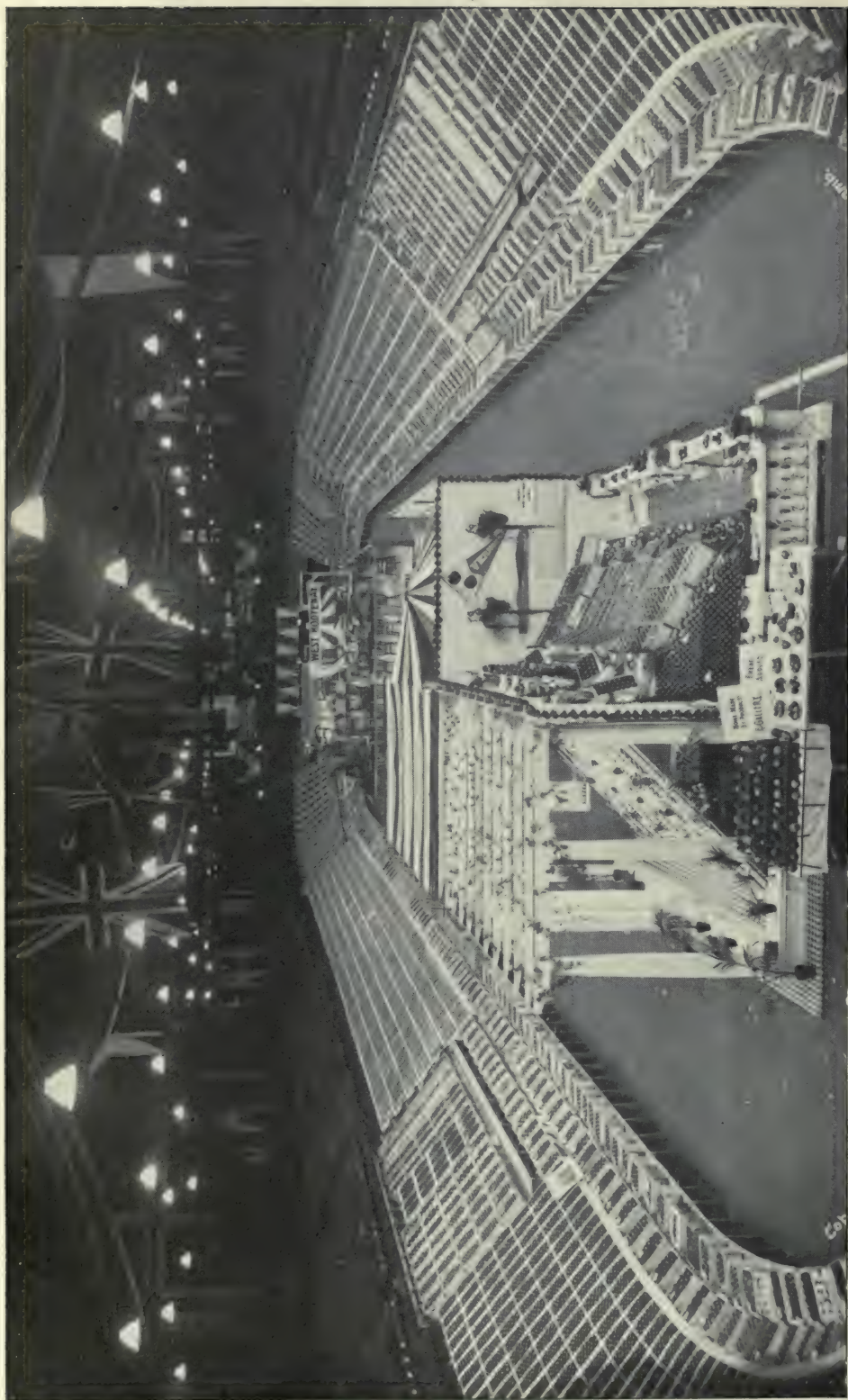
1. F. R. E. De Hart, Kelowna, B. C. \$3
2. J. Creighton, Penticton, B. C. 2

Fameuse.

1. A. Goldsmith, Kaslo, B. C. \$3
2. C. J. Thomson, Summerland, B. C., .. 2

Richter.

1. Mrs. T. Richter, Keremeos, B. C. \$3



THE ARENA BY ELECTRIC LIGHT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Rullen & Lamb, Vancouver

Peasegood Nunsuch.

1. E. Thomson, West Kootenay \$3
2. H. E. Cook, Gordon Head, B. C. 2

Duchess.

1. C. L. Green, Wenatchee, Wash. \$3

Cranberry.

1. A. Stewart, Summerland, B. C. \$3
2. H. W. Collins, Grand Forks, B. C. ... 2

Black Twig.

1. R. Lawson, Grand Forks, B. C. \$3
2. J. Rooke, Grand Forks, B. C. 2

Black Detroit.

1. J. T. Black, Wenatchee, Wash. \$3

Clayton.

1. C. L. Green, Wenatchee, Wash. \$3

Missing Link.

1. C. L. Green, Wenatchee, Wash. \$3
2. W. Green, Wenatchee, Wash. 2

Chicago.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. H. L. Tedford, Wenatchee, Wash. .. 2

Chenango.

1. R. H. Fortune, Salmon Arm, B. C. .. \$3
2. R. H. Fortune, Salmon Arm, B. C. .. 2

Delicious.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. C. L. Green, Wenatchee, Wash. 2

Blue Pearmain.

1. J. T. Black, Wenatchee, Wash. \$3
2. F. R. E. De Hart, Kelowna, B. C. .. 2

Belle de Boskoop.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

Blenheim.

1. J. T. Bealby, Nelson, B. C. \$3
2. J. T. Bealby, Nelson, B. C. 2

Ben Davis.

1. H. L. Tedford, Wenatchee, Wash. .. \$3
2. Tedford Bros., Wenatchee, Wash... 2

Aiken Red.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

Arkansas Black.

1. C. L. Green, Wenatchee, Wash. .. \$3
2. H. L. Tedford, Wenatchee, Wash. .. 2

Fallwater.

1. H. Ingalls, Keremeos, B. C. \$3
2. Thos. A. Brydon, P.O. Box 157, Victoria, B. C. 2

Gravenstein.

1. J. T. Bealby, Nelson, B. C. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

Hubbardston's Nunsuch.

1. J. Stewart, Summerland, B. C. \$3
2. J. Conlin, Kelowna, B. C. 2

Gideon.

1. J. Bugging, West Kootenay \$3

Hoover.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. J. T. Black, Wenatchee, Wash. 2

Jonathan.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. C. L. Green, Wenatchee, Wash. 2

Lady.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. Tedford Bros., Wenatchee, Wash. .. 2

Red June.

1. C. L. Green, Wenatchee, Wash. \$3
2. W. Green, Wenatchee, Wash. 2

Smith's Cider.

1. J. L. Maxwell, Dryden, Wash. \$3

Yellow Newtown.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. J. Creighton, Penticton, B. C. 2

Yellow Bellflower.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. Tedford Bros., Wenatchee, Wash. .. 2

King David.

1. H. L. Tedford, Wenatchee, Wash. .. \$3
2. Tedford Bros., Wenatchee, Wash. .. 2

Jefferis.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. Tedford Bros., Wenatchee, Wash. .. 2

Haas.

1. H. W. Collins, Grand Forks, B. C. .. \$3

Hyde's King.

1. C. L. Green, Wenatchee, Wash. .. \$3
2. W. Green, Wenatchee, Wash. 2

Golden Russet.

1. W. H. Armstrong, Keremeos, B. C. \$3
2. H. S. Fanquier, West Kootenay 2

Gloria Mundi.

1. E. T. Cook, Nanaimo, B. C. \$3
2. H. Allberry, Hagans, South Saanich 2

Gano.

1. C. L. Green, Wenatchee, Wash. \$3
2. Tedford Bros., Wenatchee, Wash. .. 2

Fall Pippin.

1. H. W. Collins, Grand Forks, B. C. \$3
2. R. Lawson, Grand Forks, B. C. 2

Maiden Blush.

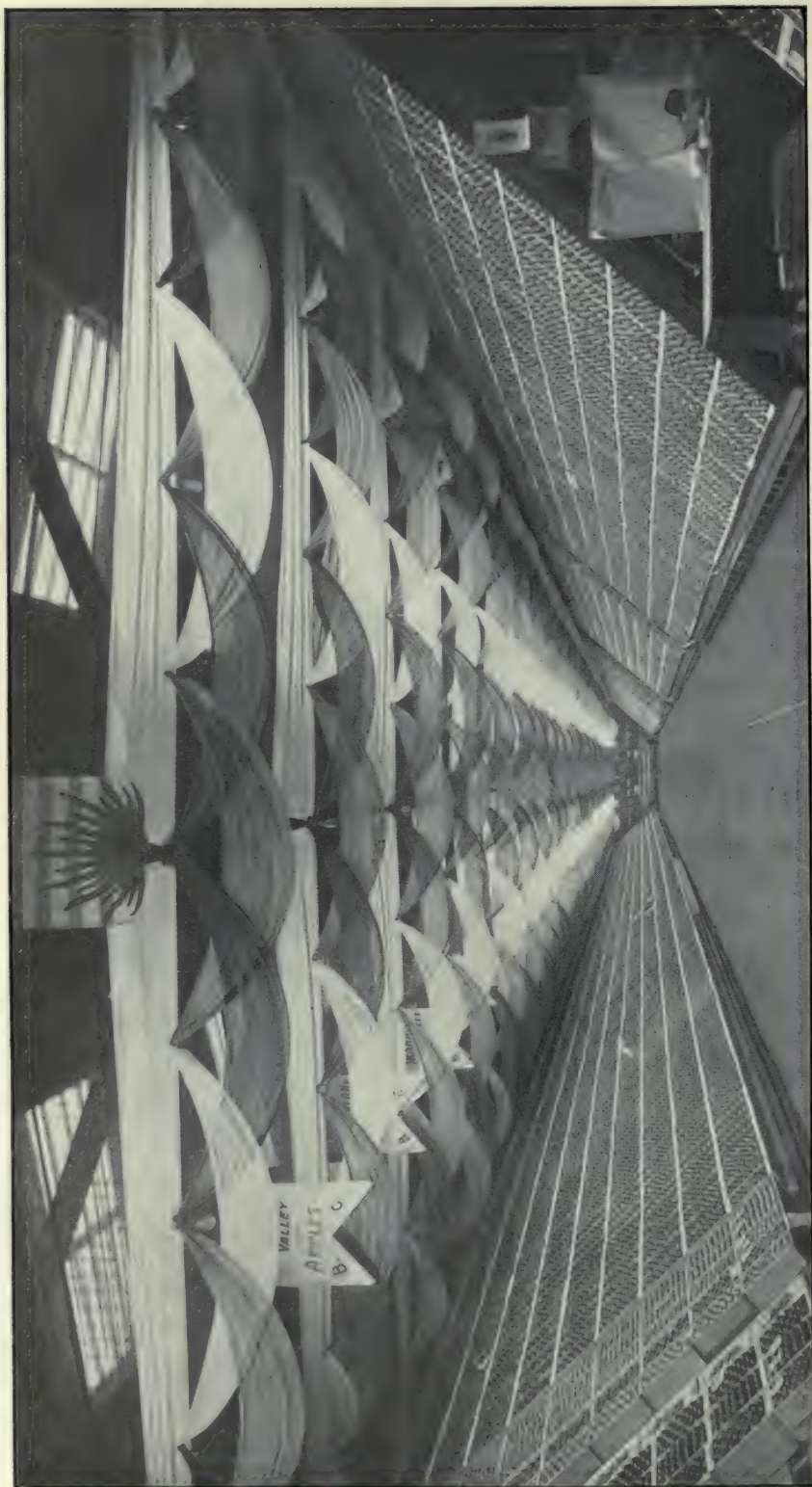
1. C. L. Green, Wenatchee, Wash. \$3
2. T. J. Wright, Central Park, B. C. .. 2

Missouri Pippin.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. W. Green, Wenatchee, Wash. 2

McIntosh Red.

1. W. R. Bartlett, Summerland, B. C. .. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2



VIEW IN THE CARLOAD LOT DISPLAYS—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver

Northwestern Greening.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

New York Wine.

1. C. J. R. Stirling, Salmon Arm, B. C. \$3
2. C. J. R. Stirling, Salmon Arm, B. C. 2

Wolf River.

1. J. T. Black, Wenatchee, Wash. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

Northern Spy.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

Mann.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. R. H. Parsons, Vernon, B. C. 2

McMahon.

1. J. Johnstone, Nelson, B. C. \$3
2. W. H. Collins, Grand Forks, B. C. 2

Lawver.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

Ortley.

1. J. T. Black, Wenatchee, Wash. \$3
2. C. L. Green, Wenatchee, Wash. 2

Mammoth Black Twig.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. C. L. Green, Wenatchee, Wash. 2

Pewaukee.

1. F. R. E. De Hart, Kelowna, B. C. \$3
2. F. R. E. De Hart, Kelowna, B. C. 2

Pomme Grise.

1. J. Conlin, Kelowna, B. C. \$3
2. Miss K. Conlin, Kelowna, B. C. 2

Rhode Island Greening.

1. C. L. Green, Wenatchee, Wash. \$3
2. C. L. Green, Wenatchee, Wash. 2

Red Cheeked Pippin.

1. Tedford Bros., Wenatchee, Wash. .. \$3
2. Jos. Johnson, Nelson, B. C. 2

Pomme de Fer (Canada Red).

1. Miss Lowe, Keremeos, B. C. \$3
2. Alex. Lochore, Lytton, B. C. 2

Walbridge.

1. C. L. Green, Wenatchee, Wash. \$3
2. J. T. Bealby, Nelson, B. C. 2

Wethly.

1. W. Rutherford, Nelson, B. C. \$3
2. E. Vickers, Salmon Arm, B. C. .. 2

Willow Twig.

1. Wm. Green, Wenatchee, Wash. \$3
2. C. L. Green, Wenatchee, Wash. 2

White Winter Pearmain.

1. C. L. Green, Wenatchee, Wash. \$3
2. Wm. Green, Wenatchee, Wash. .. 2

Stayman Winesap.

1. H. L. Tedford, Wenatchee, Wash. \$3
2. C. L. Green, Wenatchee, Wash. 2

Shackleford.

1. C. L. Green, Wenatchee, Wash. \$3
2. J. T. Black, Wenatchee, Wash. 2

Swaar.

1. A. Unsworth, Chilliwack, B. C. \$3
2. A. Unsworth, Chilliwack, B. C. 2

Stark.

1. H. L. Tedford, Wenatchee, Wash. ... \$3
2. F. R. E. De Hart, Kelowna, B. C. ... 2

20-oz. Pippin.

1. F. R. E. De Hart, Kelowna, B. C. ... \$3
2. B. MacDonald, Kelowna, B. C. 2

Winter Banana.

1. Tedford Bros., Wenatchee, Wash. \$3
2. C. L. Green, Wenatchee, Wash. 2

St. Lawrence.

1. J. L. French, West Kootenay. \$3

York Imperial.

1. Tedford Bros., Wenatchee, Wash. ... \$3
2. David Boss, Sunnyside, Wash. 2

Winesap.

1. H. L. Tedford, Wenatchee, Wash. .. \$3
2. Wm. Tedford, Wenatchee, Wash. ... 2

Winterstein.

1. W. T. Buggins, West Kootenay. \$3

Virginia Greening.

1. C. L. Green, Wenatchee, Wash. \$3
2. Wm. Green, Wenatchee, Wash. 2

Tallman.

1. F. R. E. De Hart, Kelowna, B. C. ... \$3
2. H. C. Thomlinson, West Kootenay. 2

White Pippin

1. C. L. Green, Wenatchee, Wash. \$3

Snow.

1. F. R. E. De Hart, Kelowna, B. C. ... \$3
2. E. Vickers, Salmon Arm, B. C. 2

Seek No Further.

1. B. MacDonald, Kelowna, B. C. \$3
2. B. MacDonald, Kelowna, B. C. 2

Salome.

1. C. L. Green, Wenatchee, Wash. \$3
2. W. H. Armstrong, Keremeos, B. C. .. 2

Senator.

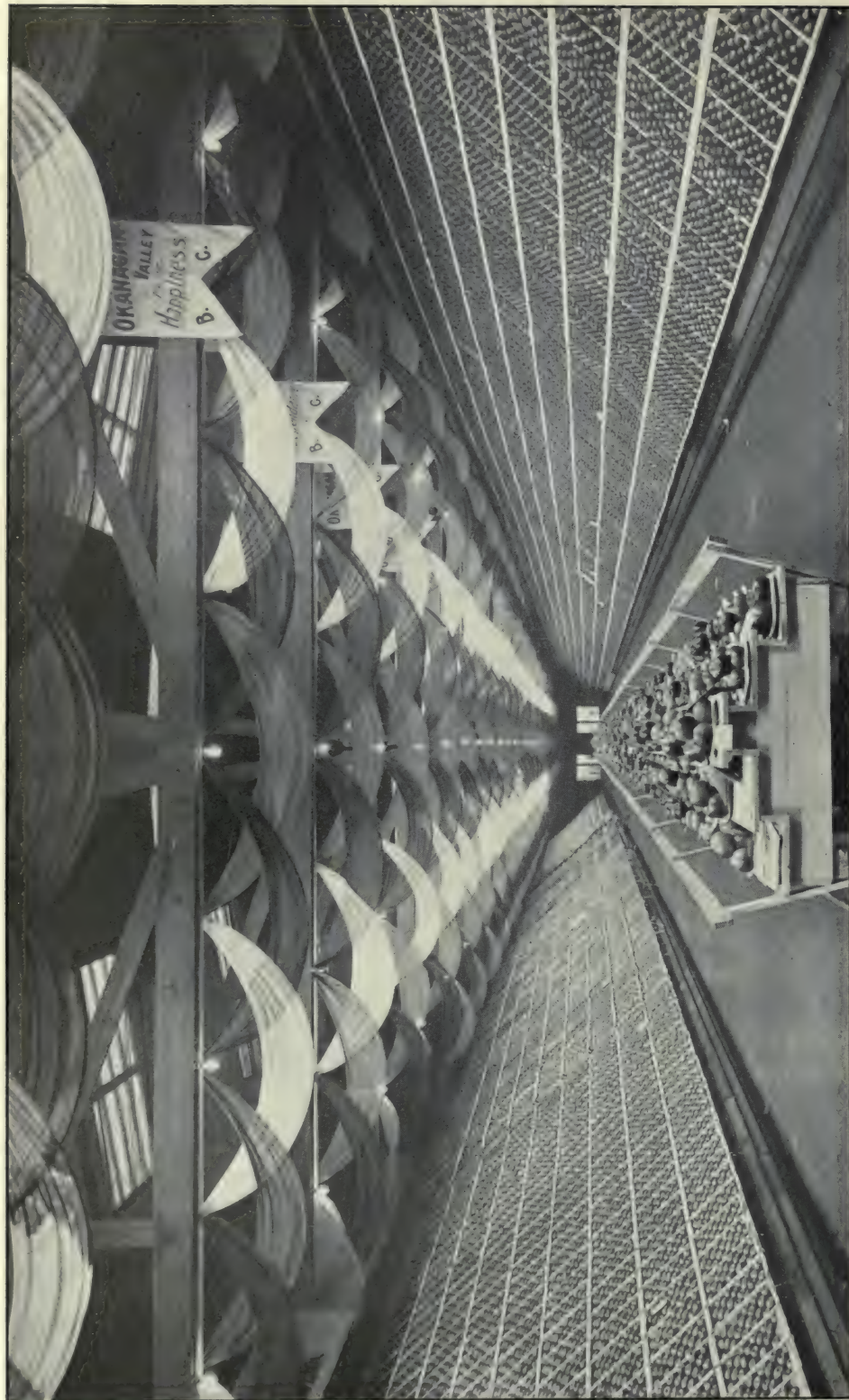
1. C. L. Green, Wenatchee, Wash. \$3
2. Tedford Bros., Wenatchee, Wash. ... 2

Spitzenberg.

1. Tedford Bros., Wenatchee, Wash. ... \$3
2. Wm. Green, Wenatchee, Wash. 2

Wagener.

1. R. H. Fortune, Salmon Arm, B. C. ... \$3
2. Albert Stewart, Summerland, B. C. ... 2



PART OF THE CARLOAD AND PLATE DISPLAYS—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver

Roxbury Russet.

1. D. McGregor, West Kootenay..... \$3
2. J. Coatham, Sardis, B. C..... 2

Ribston Pippin

1. Mrs. F. D. Nicholson, Salmon Arm, B. C..... \$3
2. R. H. Fortune, Salmon Arm, B. C... 2

Rome Beauty.

1. C. L. Green, Wenatchee, Wash..... \$3
2. J. T. Black, Wenatchee, Wash..... 2

Ontario.

1. John Stewart, Summerland, B. C... \$3
2. W. McGuire, West Kootenay..... 2

Grimes Golden

1. R. Gaskell, West Kootenay..... \$3
2. G. W. Drinkwine, Wenatchee, Wash. 2

American Pippin

1. Stocks and Jackson \$3

Belmont.

1. C. L. Green, Wenatchee, Wash..... \$3
2. Wm. Green, Wenatchee, Wash..... 2

Champion.

1. C. L. Green, Wenatchee, Wash..... \$3

McAffee.

1. C. L. Green, Wenatchee, Wash..... \$3
2. Wm. Green, Wenatchee, Wash..... 2

Scarlet Pippin

1. Alex. Stewart, Summerland, B. C... \$3

Yellow Transparent.

1. C. L. Green, Wenatchee, Wash..... \$3

Sutton.

1. F. R. E. De Hart, Kelowna, B. C... \$3
2. F. R. E. De Hart, Kelowna, B. C... 2

Winter St. Lawrence

1. F. R. E. De Hart, Kelowna, B. C... \$3

Longfield.

1. F. R. E. De Hart, Kelowna, B. C... \$3

Bottle Greening.

1. A. J. Smythe, Calgary, Alta..... \$3

Tompkins King.

1. J. D. Godwin \$3
2. H. J. Keary, Pavilion, B. C..... 2

CLASS 7—LIMITED DISPLAY.

1. R. H. Fortune, Salmon Arm.....\$250
2. Kelowna Board of Trade..... 125
3. West Kootenay Fruit Exchange.... 50
4. W. H. Armstrong, Keremeos, B. C.. 25

CLASS 8—BIGGEST APPLES.

1. R. H. Fortune, Salmon Arm, B. C..\$150
2. H. W. Collins, Grand Forks, B. C... 75
3. F. R. E. De Hart, Kelowna, B. C... 50
4. J. T. Smith, Kamloops, B. C..... 25

Biggest Apple on Earth.

1. Fred L. Post & Sons, Chelan, Wash., \$100 solid gold medal.
2. C. E. Weeks, Kelowna, B. C., \$50 solid silver gold-embossed medal.
3. C. L. Green, Wenatchee, Wash., \$25 solid silver medal.
4. R. H. Fortune, Salmon Arm, B. C., \$10 bronze medal.

Freak Apple.

1. C. L. Green, Wenatchee, Wash., \$10 bronze medal.

CLASS 9—PACK AWARDS.**3½-Tier Pack (285)**

1. Tedford Bros., Wenatchee, Wash...\$75.00
2. C. L. Green, Wenatchee, Wash... 37.50
3. C. L. Green, Wenatchee, Wash... 12.50
4. T. J. Black, Wenatchee, Wash., \$10 bronze medal.

4-Tier Pack (286)

1. H. L. Tedford, Wenatchee, Wash...\$100
2. Mrs. John Smith, Spence's Bridge, B. C. 50
3. J. W. Bennett, Mayne Island, B. C.. 25

4½-Tier Pack (287).

1. J. W. Morris & Co., Vancouver, B. C..\$100
2. Mrs. John Smith, Spence's Bridge, B. C. 50

5-Tier Pack (288).

1. Tedford Bros., Wenatchee, Wash...\$75.00
2. C. L. Green, Wenatchee, Wash. .. 37.50
3. W. W. Sawyer, Sunnyside, Wash.. 12.50
4. Mrs. John Smith, Spence's Bridge, B. C., \$10 bronze medal.

Shipping Pack Special (289).

1. J. W. Cockle, West Kootenay, \$25 solid silver medal.
2. F. R. E. De Hart, Kelowna, B.C.. Diploma

CLASS 10—SPECIAL SWEEPSTAKES.

To the winner of the most prizes of all kinds, \$75 solid gold medal—C. L. Green, Wenatchee, Wash.

To the winner of the most first prizes, \$100 gold medal—C. L. Green, Wenatchee, Wash.

To the winner of the most first prizes, Single-box Display, \$25 silver medal—Tedford Bros., Wenatchee, Wash.

To winner of the most prizes in Plate Display, \$25 silver medal—C. L. Green, Wenatchee, Wash.

To the winner of most first prizes in Plate Display, \$25 silver medal—C. L. Green, Wenatchee, Wash.

To winner of the most first prizes in Class 3, \$75 solid gold medal—F. R. E. De Hart, Kelowna, B. C.

To the winner of most first prizes in Class 4, \$50 solid silver gold-embossed medal—C. L. Green, Wenatchee, Wash.



DOMINION GOVERNMENT DISPLAY—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver

To winner of most artistically-arranged competitive exhibit, \$100 solid gold medal—R. H. Fortune, Salmon Arm, B. C.

To the exhibitor making most entries in all classes, \$25 solid silver medal—F. R. E. De Hart, Kelowna, B. C.

Fruit Magazine Special.

To the winner of most first prizes by any exhibitor in Canada, \$150 solid gold medal—F. R. E. De Hart, Kelowna, B. C.

Three Best Boxes or Barrel Sweepstakes.

1. Tedford Bros., Wenatchee, Wash. (Spitzenberg) \$75
2. C. L. Green, Wenatchee, Wash. (Mammoth Black Twig) 50
3. J. T. Bealby, Nelson, B. C. (Golden Russet) 25

CLASS 11—HOME-MADE BY-PRODUCTS.

Unflavored Apple Butter (301).

1. R. M. Raymer, Vancouver, B. C. .. \$10
2. Mrs. S. Robson, Victoria, B. C. .. 5

Preserved Apples (302).

1. R. M. Raymer, Vancouver, B. C. .. \$10
2. W. Rutherford, Nelson, B. C. 5

Best Pint of Apple Jelly (303).

1. J. S. Bell, Lillooet, B. C. \$10
2. G. R. Gordon, 1109 Barclay street, Vancouver 5

Best Gallon Apple Cider (304).

1. W. E. Donnelly, Portland, Ore. ... \$10
2. W. H. Covert, Grand Forks, B. C. .. 5

Best Gallon Cider Vinegar (305).

1. W. E. Donnelly, Portland, Ore. ... \$10
2. G. R. Gordon, 1109 Barclay street, Vancouver 5

Pint Jar of Apple Marmalade (306).

1. Mrs. M. Lawrence, Hall's Prairie, B. C. \$10
2. J. W. Bennett, Mayne Island, B. C. 5

Best Half-Gallon Jar of Pickled Apples (307).

1. Mrs. F. W. McGregor, Salmon Arm, B. C. \$10
2. Mrs. M. Lawrence, Hall's Prairie, B. C. 5

Best App'le Relish (308).

1. Mrs. Wm. Rutherford, Nelson, B. C. \$10
2. Mrs. M. Lawrence, Hall's Prairie, B. C. 5

Best Display Home-made Apple Products (309).

1. Mrs. Wm. Rutherford, Nelson, B. C. 50 Paeony Plants (F. W. Meneray, Crescent Nursery Co., Council Bluffs, Iowa), value \$25, one '98 Turntable Apple Parer, donated by Goodell Co., Antrim, N. H., and \$100 cash.
2. Mrs. F. W. McGregor, Salmon Arm, B. C., one '98 Turntable Apple Parer, donated by Goodell Co., Antrim, N. H., and \$50 cash.

3. Mrs. E. Toombs, Salmon Arm, B. C., one '98 Turntable Apple Parer, donated by Goodell Co., Antrim, N. H., and \$25 cash.

4. R. M. Raymer, Vancouver, B. C., one '98 Turntable Apple Parer, donated by Goodell Co., Antrim, N. H., and \$10 cash.

5. Mrs. M. Lawrence, Halls Prairie, B. C., Diploma, and one '98 Turntable Apple Parer, donated by Goodell Co., Antrim, N. H.

6. Mrs. Spencer Percival, West Pender Island, B. C., Diploma, and one '98 Turntable Apple Parer, donated by Goodell Co., Antrim, N. H.

CLASS 13—WINDOW DISPLAY.

1. Spencer & Co., Ltd.—\$100 solid gold medal.
2. Spencer & Co., Ltd.—\$75 solid gold medal.
3. Baxter & Wyller—\$50 solid silver medal, gold-embossed.
4. Melhuish & Kirchner—\$25 solid silver medal.
5. Buscombe & Co.—\$10 bronze medal.
6. A. & C. Grocery—Diploma.

CLASS 14—SPECIAL PRIZES.

Best collection of apples, winter variety, grown in British Columbia north of the 52nd parallel of north latitude (C. L. Hanson, Victoria, B. C., 500 Apple Trees, F. O. B. Nursery, value \$100)—Won by I. Fougner, Bella Coola, B. C.

Best Yield from Single Tree (313).

1. Reported by C. J. R. Sterling, Salmon Arm, B. C., who took eight (8) boxes of commercial apples from a six (6) year old Jonathan tree—100 Spitzenberg Apple Trees, value \$25, donated by the Yakima-Sunnyside Nursery, Sunnyside, Wash.

CLASS 16—PHOTOGRAPHIC DISPLAY.

1. The Carpenter Studio, W. J. Carpenter, Photographer, Hastings street, Vancouver, B. C. \$100
2. G. H. E. Hudson, Kelowna, B. C. .. 50
3. A. J. Cooper, Grand Forks, B. C. .. 25

CLASS 17—CRAB APPLES.

Single Box.

1. J. T. Bealby, Nelson, B. C. \$5

Plate—Hyslop.

1. F. R. E. De Hart, Kelowna, B. C. .. \$2
2. C. L. Green, Wenatchee, Wash. 1

Martha.

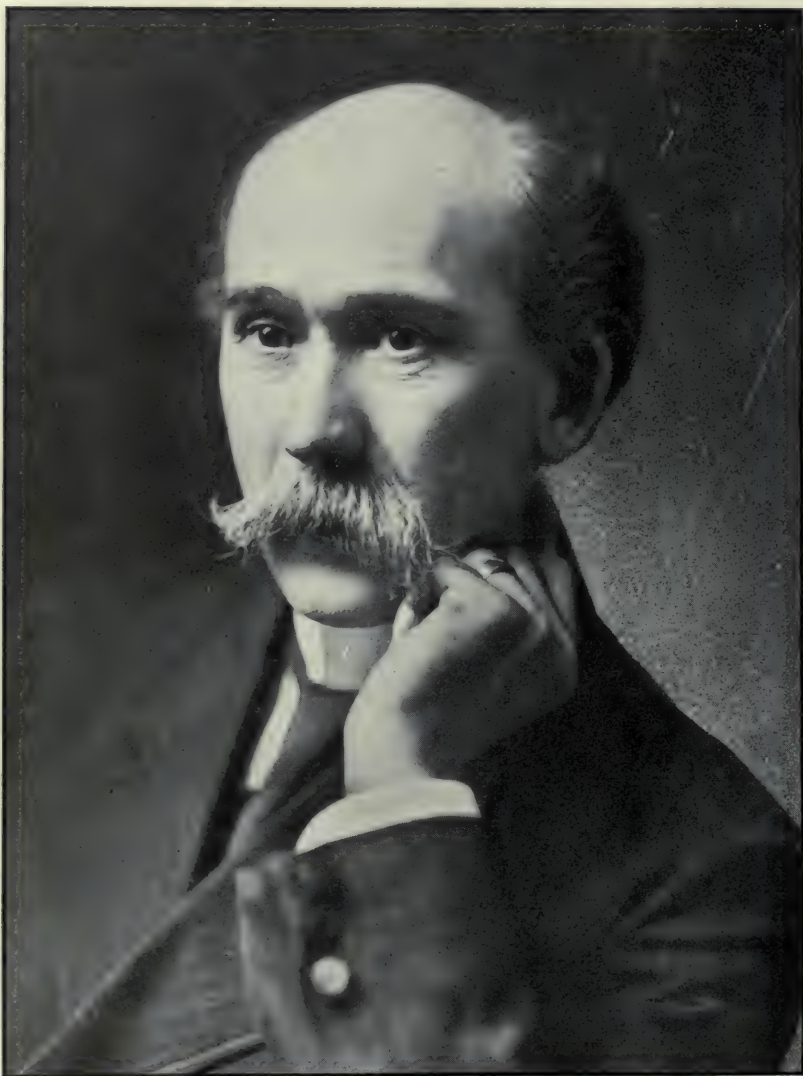
1. C. L. Green, Wenatchee, Wash. ... \$2

Transcendent.

1. C. L. Green, Wenatchee, Wash. ... \$2

General Grant.

1. J. T. Bealby, Nelson, B. C. \$2



Yours faithfully
Maxwell Smith

Manager First Canadian National Apple Show

HONORABLE MENTION.

Bronze Medal.

Agricultural Dept., Dominion Govt., Ottawa
H. Jones & Co., Hobart, Tasmania.

Diploma.

I. Fougner, Bella Coola, B. C. (north latitude).
Rossland Board of Trade, Rossland, B. C. (high-altitude fruit).
R. Lawson, Grand Forks, B. C. (artistic arrangement car-load exhibit).
F. A. Parker, Berwick, Nova Scotia.
Agricultural Dept., Provincial Government, Victoria, B. C.
W. D. Dunlop & Co., Yorkton, Sask.
J. C. Smythe, Calgary, Alta.
J. S. Bell, Lillooet, B. C. (47 miles by freight wagon).

Nicola Board of Trade, Nicola, B. C.
Nanaimo District Exhibit, Nanaimo, B. C.
Kamloops District Exhibit, Kamloops, B. C.
West Kootenay Fruit Exhibit, West Kootenay, B. C.

L. J. A. Westerlund, Medford, Ore.
Langley Board of Trade, Langley, B. C.
Masters Kitchener and Darwin Bell, Lillooet, B. C.

J. D. Taggard, Waiteburg, Wash.
J. L. Webster, Vernon, B. C.
N. S. Titchneal, Cashmere, Wash.
Annie Renwick, Eburne, B. C.
W. H. Burton, Chilliwack, B. C.
J. H. McCormack, Burton, B. C.
A. S. Burbank, Cashmere, Wash.
Penticton Fruit-growers' Association, Penticton, B. C.

Thomas Clark, Lytton, B. C.
A. De B. Talor, Ladner, B. C.
J. Arnould, Sardis, B. C.
T. A. Wood, Jr., Duncans, B. C.
J. Spears, Corfield, B. C.
H. M. Ozard, Gordon Head, B. C.
H. Davey, Cedar Cottage, Vancouver, B. C.
Mrs. E. Milton Head, Gordon Head, B. C.
H. Westman, Vancouver, B. C.
T. Cairns, Comox, B. C.
R. Robertson & Co., Vancouver, B. C.
H. H. Grist, Gordon Head, B. C.
M. Paasb, Portland, Ore.
A. E. McKeand, Vancouver, B. C.

S. Middleton, Nelson, B. C.
Spencer Percival, Pender Island, B. C.
Mrs. H. A. Johnston, Vancouver, B. C.
Mrs. R. A. Hunter, Victoria, B. C.
C. E. McCubbing, Salmon Arm, B. C.
W. A. Banks, Salmon Arm, B. C.
W. O. Leonard, Salmon Arm, B. C.
F. D. Nicholson, Salmon Arm, B. C.
Heatherbell Bros., Colwood, B. C.
Alister Thompson, Dewdney, B. C.
J. Hunter, Armstrong, B. C.
Mrs. P. H. Green, Vancouver, B. C.
R. Leckie Ewing, Ewing's Landing, B. C.
W. A. Smith, Burgintlan, B. C.
All-Hallows School, Yale, B. C.

W. Teague, Yale, B. C.
W. G. Mattice, Keremeos, B. C.
J. Mattice, Keremeos, B. C.
A. Mattice, Keremeos, B. C.
A. Robinson, Merritt, B. C.
W. J. Graham, Woodward, B. C.
G. R. Lawes, Enderby, B. C.
Miss E. Lawes, Enderby, B. C.
Egbert Trask, Oyama, B. C.
Mutrie & Mutrie, Vernon, B. C.
B. A. Shatford, Penticton, B. C.
J. Goosen, Enderby, B. C.
A. Campbell, Westminster, B. C.
A. Conro Fiero, Medford, Ore.
F. Madden, Medford, Ore.
J. R. Findlay, Medford, Ore.
Hillcrest Orchard, Medford, Ore.
E. Renshaw, Medford, Ore.
T. S. Sewell, Outlook, Wash.
Lorr & Ball, Methow, Wash.
Annie M. Gosse, Colwood, B. C.
A. J. Cooper, Grand Forks, B. C.
Miss E. Irving, Victoria, B. C.
Mrs. Andrew Irving, Victoria, B. C.
J. Cook, Creston, B. C.
B. Nicholson, Salmon Arm, B. C.
C. E. Ehlers, Salmon Arm, B. C.
R. Turner, Salmon Arm, B. C.
H. Gildemeester, Mara, B. C.
C. W. Little, Mara, B. C.
J. G. Keefer, Central Park, B. C.
H. Reynolds, Summerland, B. C.
H. C. Mellor, Summerland, B. C.
J. J. Mitchell, Summerland, B. C.
S. M. Young, Summerland, B. C.
A. E. Walker, Summerland, B. C.
T. Dale, Summerland, B. C.
J. Ritchie, Summerland, B. C.
Dunsdon Bros., Summerland, B. C.
R. H. Agur, Summerland, B. C.
G. F. McLaren, Summerland, B. C.
J. F. Merritt, Summerland, B. C.
J. Stewart, Summerland, B. C.
A. Stewart, Summerland, B. C.
J. Perry, Nanaimo, B. C.
R. Butler, Nanaimo, B. C.
Mowat Produce Co., Vancouver, B. C.
W. F. Brooks, Clayton, B. C.
Errington & Cantwell, Sidney, B. C.
J. J. Robson, Mayne Island, B. C.
Washington Grimmer, West Pender Island, B. C.
J. Haunsome, Chilliwack, B. C.
J. Gibb, Kelowna, B. C.
W. Mackie, Agassiz, B. C.
W. Middleton, Vernon, B. C.
J. Lawler, Summerland, B. C.
C. A. Phair, Lillooet, B. C.
W. Barker, Denman Island, B. C.
J. Duncan, Vancouver, B. C.
G. Simpson, Langley, B. C.
W. Mitchell, Mission City, B. C.
W. G. Durguid, Lillooet, B. C.
West Oregon Orchard Co., Medford, Ore.
West Oregon Orchard Dev. Co., Medford, Ore.
H. J. Keary, Pavilion, B. C.



KELOWNA LIMITED DISPLAY—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by W. J. Carpenter, Vancouver

- A. W. Peen, Mission Junction, B. C.
 A. Westland, Lynden, Wash.
 A. McDonell, Vernon, B. C.
 Mrs. G. H. Feldtmann, Penticton, B. C.
 Mrs. F. J. Ades, Cedar Cottage, Van.
 Virginia Johnston, Nelson, B. C.
 J. Johnstone, Nelson, B. C.
 J. Tarry & Son, West Kootenay, B. C.
 F. H. Coing, West Kootenay, B. C.
 C. Y. Walton, West Kootenay, B. C.
 E. D. Campbell, West Kootenay, B. C.
 Max Nord, West Kootenay, B. C.
 C. D. Johansen, West Kootenay, B. C.
 J. M. Allen, West Kootenay, B. C.
 W. B. Smith, West Kootenay, B. C.
 A. F. Garland, West Kootenay, B. C.
 W. E. Hodder, West Kootenay, B. C.
 J. Jensen, West Kootenay, B. C.
 F. E. Archer, West Kootenay, B. C.
 J. McGaney, West Kootenay, B. C.
 A. D. Wheeler, West Kootenay, B. C.
 M. Watson, West Kootenay, B. C.
 J. W. Dow, West Kootenay, B. C.
 G. Hollett, West Kootenay, B. C.
 J. Johnson, West Kootenay, B. C.
 J. Wilson, West Kootenay, B. C.
 F. Hammell, West Kootenay, B. C.
 C. N. Tripp, West Kootenay, B. C.
 Mrs. C. F. Caldwell, West Kootenay, B. C.
 Rev. J. W. Winslow, West Kootenay, B. C.
 E. C. Chipman, West Kootenay, B. C.
 A. F. Davis, West Kootenay, B. C.
 E. Norman, West Kootenay, B. C.
 C. Gray, West Kootenay, B. C.
 R. C. Teviotdale, West Kootenay, B. C.
 J. Sloan, West Kootenay, B. C.
 D. A. McFarland, West Kootenay, B. C.
 J. E. Annable, West Kootenay, B. C.
 J. F. Thompson, West Kootenay, B. C.
 A. D. Emory, West Kootenay, B. C.
 J. Heath, West Kootenay, B. C.
 W. Arrowsmith, West Kootenay, B. C.
 J. Spratt, West Kootenay, B. C.
 J. P. Horwell, West Kootenay, B. C.
 W. K. Brown, West Kootenay, B. C.
 A. E. Webster, Chilliwack, B. C.
 W. H. Shaw, Cabriola Island, B. C.
 A. Westlund, Lynden, Wash.
 G. H. Eraut, Penticton, B. C.
 M. J. Mannery, Keremeos, B. C.
 Mrs. J. T. Hutchinson, Vancouver, B. C.
 R. Fox, Rossland, B. C.
 J. Horwell, Rossland, B. C.
 G. Denison, Rossland, B. C.
 J. T. C. Fraser, Rossland, B. C.
 T. H. Brown, Rossland, B. C.
 H. W. Atkinson, Rossland, B. C.
 J. Sloan, Rossland, B. C.
 J. Basiniski, Wenatchee, Wash.
 H. Lee, Midway, B. C.
 H. Hole, Summerland, B. C.
 Mrs. H. W. Chapman, Kelowna, B. C.
 Miss Maud Raymer, Kelowna, B. C.
 J. G. Peters & Sons, Dryden, Wash.
 A. Smith, Cashmere, Wash.
 Samson & Archibald, Vernon, B. C.
 T. A. Hardie, Vancouver, B. C.
 J. Ray, Kelowna, B. C.
 C. J. Thomson, Summerland, B. C.
 W. Simpson, Summerland, B. C.
 Lumsden Bros., Summerland, B. C.
 E. Herrick, Grand Forks, B. C.
 J. Hankie, Fairmount, B. C.
 W. S. Santo, Windermere Park, B. C.

A Dry Belt Fruit District

By JOHN REDINGTON

JOSH BILLINGS wrote: "It's better not to know so many things than to know so many things that ain't so."

The many things that "ain't so" about fruit-growing include particularly the old notions as to where fruit will and where it will not grow.

Only a few years ago it would have made a first-class funny paper joke to have spoken about sending fruit from British Columbia for the London market. The day of this joke is past. It is now a reality. The only question today is where to get the best British Columbia fruit land before the day of \$1,000 an acre makes fruit-growing—or, rather,

fruit orchard owning—a business of the rich.

The truth is plain—though men have been slow to grasp it. Latitude in British Columbia has little to do with success in fruit culture, for fruit is being grown as a marketable commodity practically from the Province's southern boundary to the 55th parallel. Not latitude, but altitude, is the governing factor. Wherever altitude permits, and, as a result, climate is favorable, and wherever the soil is of the proper quality, there fruit culture can be successfully undertaken.

These facts appeal alike to the man who makes fruit cultivation his business, the general public and to the investor.



WEST KOOTENAY LIMITED DISPLAY—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by W. J. Carpenter, Vancouver

As a result the fruit-grower is to a large extent overcoming the dazzle of highly successful and well-advertised fruit districts, where land is today at a high price—though cheap in view of its productive capabilities—and is looking around for good land that can not be bought for less money. This feeling has, within the past year, stimulated interest in a number of new fruit-growing localities, that will in five years be as famous as any fruit-growing district on the Pacific slope.

Ashcroft, as all British Columbians know, is in the "dry belt," the rainfall averaging less than ten inches annually. Its soil is a volcanic ash, from five feet to practically an unknown depth. Its natural vegetation is principally sage brush, and a casual observer would, at first glance, never dream of what productive marvels the soil is capable once it feels the vitalizing influence of irrigation. Once water is turned over the land, however, "the desert blossoms as the rose," and phenomenal yields of every fruit and vegetable growable in the temperate zone are raised in truly surprising perfection and yield. The dry climate completely frees the district of insect pests and of blights; not a borer can be seen in any Ashcroft or Basque orchard. There is neither scale, blight or disease of any description to be found in the vicinity—facts that, coupled with the proved abundance of both orchard and field yields, are in themselves sufficient to insure the development within a short time of every acre available for fruit-farming.

The largest of the new fruit enterprises recently undertaken in this district is what is known as the "Basque Fruit Farms." The name—that of a small tip-tilted province many times smaller than many a British Columbian municipality, nestled among the topmost crags of the Pyrenees, and whose people speak the most involved and difficult language known to mankind—was given to the property from its original owner, who hailed from the Spanish borderland. This was fifty years ago, even before the days of the Columbian Argonauts,

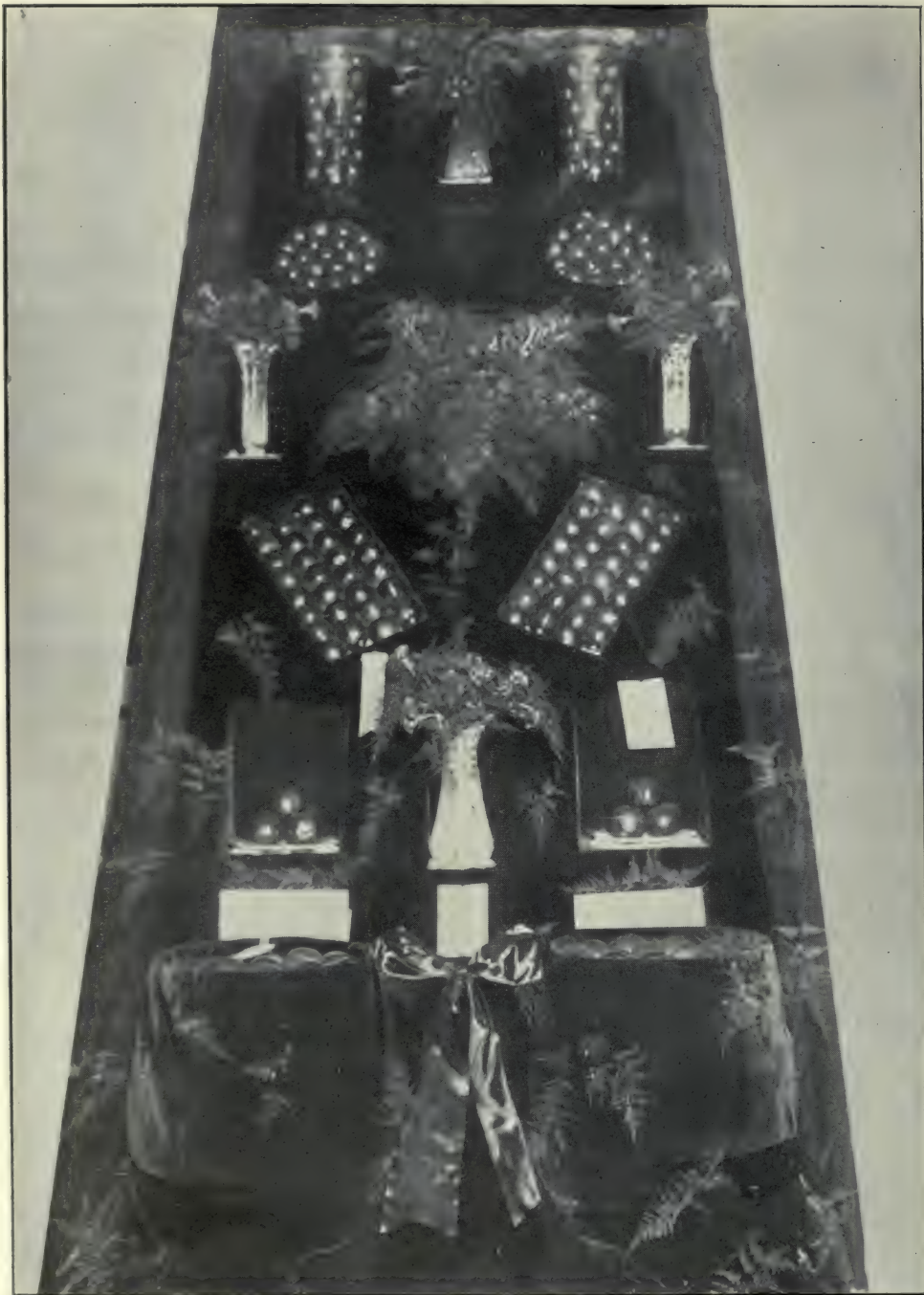
the days of the "Cariboo Rush." These swarthy, blackhaired Spaniards recognized the volcanic soil as kin to that which have given the lower slopes of the Pyrenees fame throughout Europe for vineyards and for olive groves. Here they settled, and here they planted fruit trees. Some of them are there yet—in splendid bearing in a green old age, and good for another thirty years of productiveness.

Most of the trees at the Basque Fruit Farms, however, were planted by Mr. Walter Langley, who a little under thirty years ago, and until last spring, was the owner of the property, when it was acquired by Mr. W. H. Hammond.

The property has an area of about 4,000 acres. The plans for its irrigation are ample and comprehensive. Abundance of water is obtainable from Hat and Oregon Jack Creeks, and a new reservoir is to be built, the storage of which, coupled with the natural flow, can put thirty inches of water over every acre.

The climate of the Basque district is ideally adapted for fruit growing. There are more than 340 days of sunshine in the year. Windstorms, hail and thunder are alike unknown. The hunting and fishing are both splendid and the scenery superb. Right on the Basque Fruit Farms is the famous "Black Canyon," one of the scenic wonders of the Province, the beauties of which have been made known wherever the English language is spoken, by the enlarged photographs issued as advertisements by the Canadian Pacific Railway.

As a sample of the productiveness of the Basque district, the records of Woods & Campbell, of Spatsum, three miles from these farms, is valuable. Apples have been grown in these orchards for the past thirty years, the varieties including Golden Russet, Grimes Golden, Spitzenberg, Northern Spy, Jonathan, Baldwin, Rhode Island Greening, Delaware Red, Winesap and Winter Banana. Their yield has averaged from ten to thirty boxes per tree, according to age and conditions, and the price realized on the tree has run from \$1.25 to \$1.60 per box.



SALMON ARM, B. C., LIMITED DISPLAY—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by W. J. Carpenter, Vancouver

Messrs. Woods & Campbell state that the trees grow very fast and produce very early. They have picked from six to ten boxes from five-year-old trees.

Another orchard in the vicinity of the Basque Fruit Farms, and one that has won almost world-wide fame, is that belonging to Mrs. John Smith, and known to all in that portion of the Province as "Widow Smith." Mrs. Smith's orchards are eleven miles down the Thompson River from the Basque Fruit Farms, and have been producing fruit for forty years. About twenty-eight acres are under cultivation, and for the past ten years the average annual shipment has been 10,000 boxes. This season 16,000 boxes will be shipped. The prices realized range from \$1.10 to \$1.60 per box on the trees. The varieties grown by Mrs. Smith are practically those to be found at Messrs. Woods & Campbell's orchards, with the addition of the Snow and the Ribstone Pippin.

Mrs. Smith's success as an orchardist can be gleaned from the following facts. For ten years in succession she has taken first prize at both the Victoria and the New Westminster Fairs, over all competitors. At the great apple show at Spokane last year she took three gold medals and a silver cup for her Grimes Goldens, Spitzenbergs, Northern Spies and Greenings. Last year she took the silver cup at Victoria over all exhibitors. In 1908 at Spokane her fruit was awarded two gold medals, a silver plate and fourteen diplomas. And, to crown all, at the blue ribbon exhibition of the world, that of the Royal Horticultural Society at London, England, Mrs. Smith was awarded the gold medal over all nations.

A district with such honors in apple-dom behind it has only to let the facts be known to attract apple-growers from everywhere.

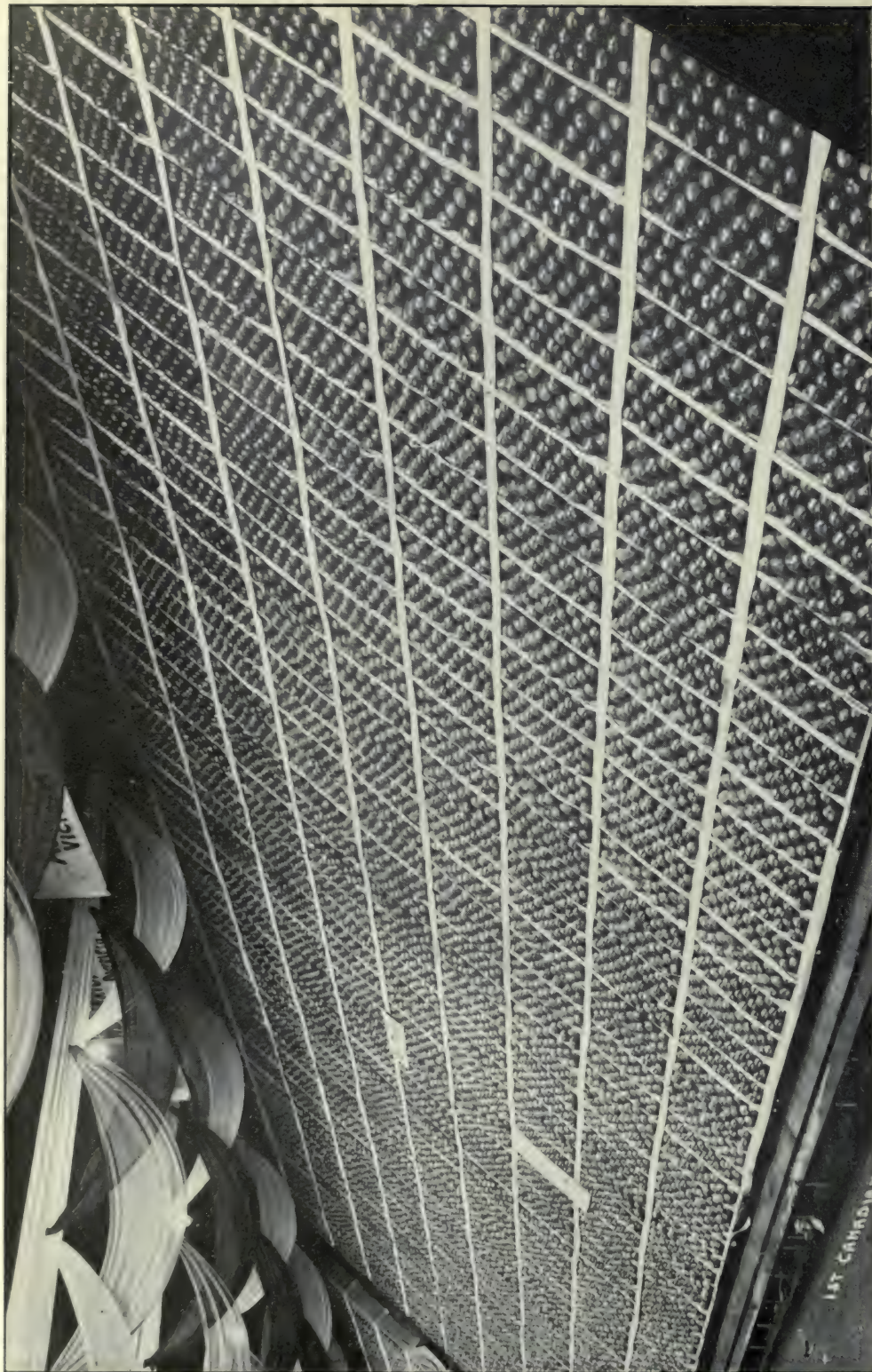
Nor is it only in apples that the Basque Fruit Farms can show such results. The cherry trees average from seven to ten boxes to the tree, worth from \$1.25 to \$1.50 unpicked, and some trees yield as high as eighteen to twenty boxes. Pears and plums do equally well, and the

peaches, prunes and apricots are excellent. Cherries ripen early in May, and currants and raspberries early in June.

Field products yield as well as do those of the orchard. The Ashcroft potatoes are famous everywhere on the Pacific slope, and most of them are grown at or near Basque. When planted among fruit trees they yield from seven to ten tons to the acre, and, if alone, from ten to sixteen tons. No bugs, blights or grubs bother them—the yield is large, the quantity unexcelled. Corn is a splendid crop, with ears from twelve to eighteen inches long, and yielding from seventy-five to one hundred and twenty-five bushels to the acre. Asparagus on the Basque Fruit Farms is ready in April, and tomatoes yield as well as in any place in the world. When this was written (Thursday, October 27) they were still ripening on the vines.



MISS LAURA ROSE, Guelph, Ont.
Dairy Expert



FIRST PRIZE CAR, KING OF TOMPKINS, FROM VICTORIA, B. C.—FIRST CANADIAN NATIONAL, APPLE SHOW
Photo by Bullen & Lamb, Vancouver

Victoria—First Prize Winner

THOSE who visited the First Canadian National Apple Show will recognise the photogravure in this number as that of the carload lot of King of Tompkins exhibited by the Victoria Fruit-growers' Exchange, which won the first prize in that class, and which was purchased by David Spencer, Ltd., at a fancy price. The exhibit attracted a great deal of attention, and were magnificent specimens, both in size and color, and demonstrated to the satisfaction of all the splendid possibilities of this part of British Columbia in apple growing. It is noteworthy that these apples were grown without irrigation, and to those who had thought that the choicest apples could only be grown in the dry belt, this exhibit was a marked revelation. There is no doubt Vancouver Island has a great future in store. The soil and climate are not only admirably adapted for the growing of apples, but almost every variety of fruit can be successfully grown. Excepting peaches and grapes, which grow in some localities, the entire island is well adapted to the raising of fruit. Apples, pears, plums, cherries, prunes, quinces and other fruit flourish splendidly, the flavor and coloring of the different varieties being especially noticeable. Vancouver Island fruit has taken first prizes in national and international exhibitions, and experts declare that for apples, pears, cherries and plums the island cannot be excelled as a natural fruit-growing country.

For berries and vegetables the land is admirably suited, Vancouver Island strawberries and loganberries being famous. Vegetables grow to enormous size, and still do not get watery or hollow. All kinds of garden and field vegetables grow astonishingly, and irrigation is almost a thing unknown.

All grasses grow luxuriantly, and dairy farming is a profitable occupation. Vancouver Island dairy stock runs almost exclusively to the highest price, and high prices for butter from the principal island creameries are maintained the year round.

In natural resources Vancouver Island is not surpassed by any corresponding

area anywhere else. In minerals alone it is fabulously rich. Clothing the hidden wealth of the mine is the forest growth of centuries. Perhaps on no other part of the American continent are the eyes of American capitalists more interestedly fixed at the present moment than on Vancouver Island. While reforestation schemes are being mooted in the East, on many parts of this island the virgin growth remains practically untouched. Agriculture on Vancouver Island has scarcely commenced. Between 750,000 and 1,000,000 acres, besides large areas for pastoral purposes, is a safe estimate of the arable land on Vancouver Island. The whole island, with its rich soil and humid climate, is by nature adapted for intensive farming. Tributary to the city of Victoria alone there are 50,000 acres of unexcelled fruit land awaiting development, and capable of supporting a population of 50,000 people.

Victoria, the capital city of British Columbia, is situated at the extreme south of Vancouver Island, and is the second commercial centre of the province. During the past three years the population has increased from 25,000 to between 40,000 and 45,000, an increase of from 15,000 to 20,000 in that period.

The outlook for the immediate future in Victoria is very bright indeed. The British Columbia Electric Railway Company are now constructing a power house at Jordan River for the extension of their lighting and tramway system, and this will mean an initial outlay of about \$2,000,000. The Grand Trunk Pacific have under way the construction of wharves in Victoria harbor for the use of their coast line of steamships to northern points. The Canadian Northern Railway also have a bill before the provincial legislature for the construction of a line from the city through the Sooke district, touching the west coast of the island. This, with the establishment of three cruisers at Esquimalt and the civic improvements contemplated, will mean an outlay of something in the neighborhood of \$8,000,000, which augurs well for the immediate future of the city.



KEREMEOS LIMITED DISPLAY—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver

Summerland

SOIL, and sunshine and irrigation, supplemented by intelligent cultivation, have made of Summerland a flourishing orchard district in a short seven years. Just that long ago the benches and valleys of the area now called Summerland were still in a state of nature, owned by the original ranchers who settled there to range cattle and horses over the broad uplands, where the bunch grass was the only surface product.

Today there are over three thousand acres of thrifty orchards, the trees varying in age from one to seven years. Many of these have begun to bear—some heavily, some in part only. The peach trees and apricots, coming to maturity earlier, have borne more in proportion, but the apple trees are beginning to make themselves felt, as witness a solid car at the National Apple Show from these same Summerland orchards. And it was but one of twenty or more shipped out from there this year—a remarkable showing for such a young district. And the prizes won show the quality.

There are at Summerland several orchards planted seventeen or eighteen years ago by the original settlers which are still highly productive. The quality of their fruit can be judged by the fact that the apples from these orchards have won many of the highest awards at the Royal Horticultural Show in London against all the colonies.

The soil of Summerland is peculiarly well adapted to fruit-growing. It is a finely divided silt or sandy loam, rich in nitrates and phosphates and other mineral elements of value. The source of these mineral constituents is readily found, for the mountains surrounding the district are limestone and granite, and for ages the slow process of erosion has been carrying down into the soil the valuable chemical deposits which need only water and cultivation to bring them into activity. Humus readily supplied by cover crops and soiling is all the stimulant the land will never need for fruit

production. That it can produce perfect fruit the first seven years of experience in the industry has proven.

The wonderful Okanagan sunshine is a powerful element in successful fruit-growing at Summerland. The atmosphere is remarkably clear at all times of the year. In 1909 there were 280 days of sunshine. Long, clear, cloudless days succeed each other week on week, in the season when the fruit is on the trees, and it is this absorption of sunshine which gives the Okanagan apple its color, flavor and texture.

The configuration of the Summerland district, with broad, open, upland stretches, nowhere shut in by mountains, is such that all day the sunshine has free play on the slopes clothed with orchard trees. Never from early morning till late evening is there shadow to check the perfecting of the fruit. This maximum of sunshine is almost as great an asset to Summerland as the soil. The slopes are south and east and west, giving a minimum of exposure to winds.

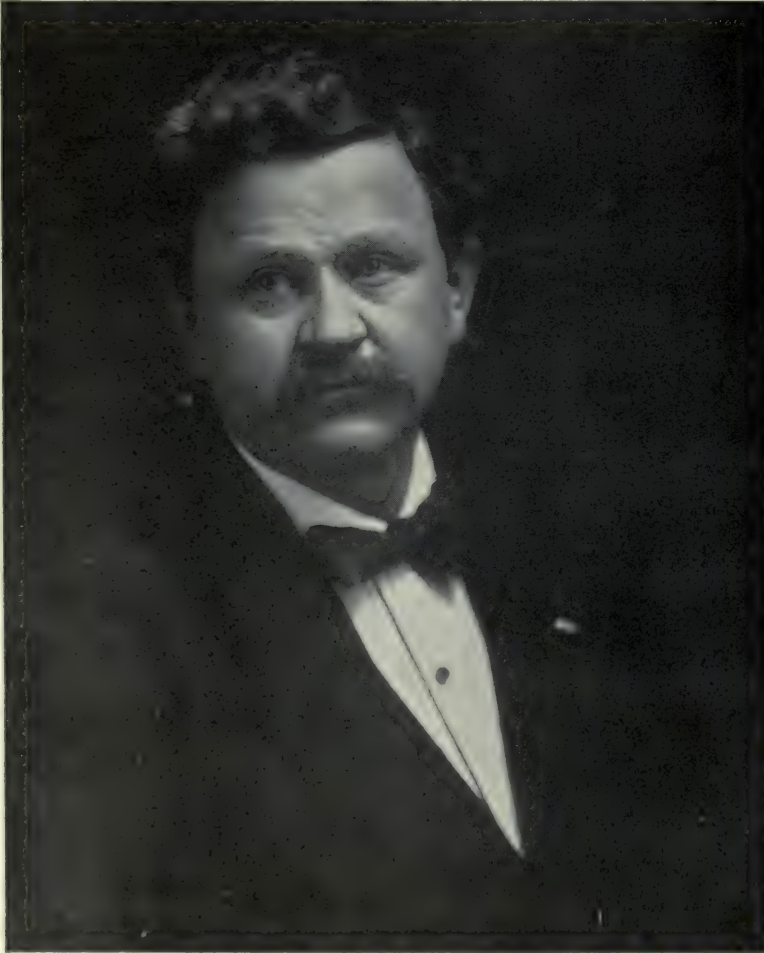
A splendid irrigation system gives ample supply of water to the Summerland orchard areas. Irrigation is a necessity to fruit production, because of the light rainfall—11 inches per year—so that this provision is an important one. The district, which has been formed as a municipality for three years, has this year acquired the ownership of the irrigation system, operating it as a public utility. Additions are in course of construction, and there is in contemplation a higher level system of ditches, which will greatly increase the irrigable area in the district. There are some 8,000 acres in all under the system, and of this three thousand acres or more are planted to fruit trees.

Every year from this out there will be an increasing area in bearing trees, until in 1916, when the present planted area of 3,000 acres is in full bearing, it is safe to estimate that Summerland will be shipping over 1,000 cars of fruit. In the seven years since Summerland was first established a population of 2,000

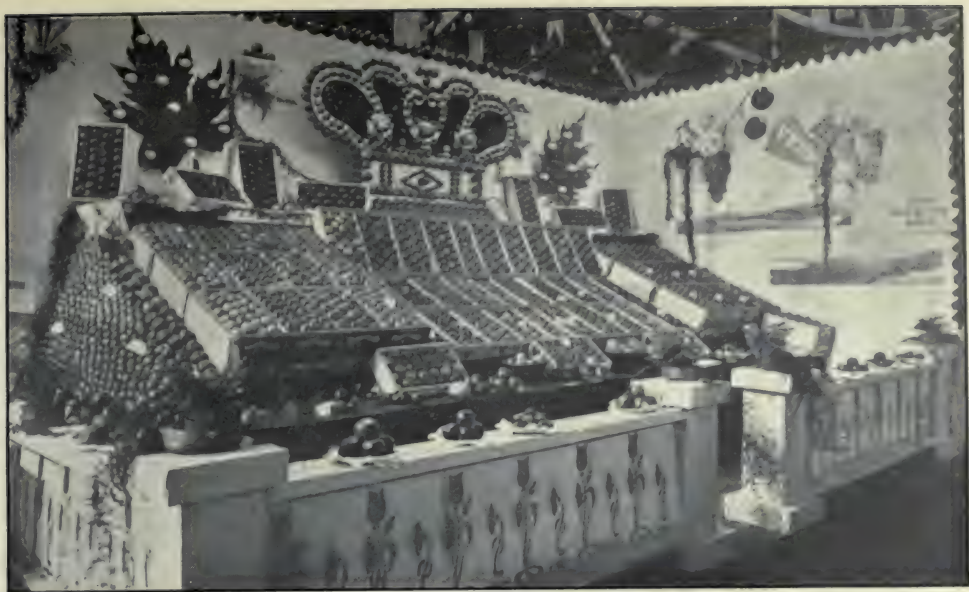
people has been gathered. Of this fully 90 per cent. are engaged in fruit culture. Every head of a family, or other adult, is the owner of one or more ten-acre fruit lots, and nearly every lot thus owned is cultivated and planted to trees, wholly or in part. Not more than 25 per cent. of the three thousand orchard acres can be said to be in bearing yet, and of this not much can be called fully bearing. Apple trees are not seriously considered till they have been planted seven or eight years. Peach and apricot trees, which thrive in Summerland, bear fairly after the fourth year. In many orchards these

trees are placed as fillers—that is, between the rows of apple trees.

The returns from these trees this season (1910) have been highly satisfactory. Over 45 cars of peaches, including a quantity canned at the local cannery, have been disposed of, and over 20 cars of apples have been sent to outside markets. There was one car of peaches shipped direct to the T. Eaton Co. at Winnipeg which caused a sensation. It was placed in the big display windows, and before 10 o'clock of the same morning every one of the thousand boxes in the shipment had been sold—a record in fruit selling in Winnipeg. The trade there



L. G. MONROE
Secretary First Canadian National Apple Show



VERNON, B. C., DISTRICT EXHIBIT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo Ly Bullen & Lamb, Vancouver

would absorb all the peaches Summerland could send out for the next five years.

Located admirably on the shores of Okanagan Lake, the present shipping facilities of Summerland are by C. P. R. steamer on the lake to Okanagan Landing, thence by rail to the main line, 48 miles distant. This year two large fruit-packing warehouses (one at the lake, the other in the midst of the orchards) were erected by the C. P. R. At the lake there have been put in a slip and tracks and sidings, so that a car ferry service can be instituted to take care of carlot shipments of the less perishable fruits. In two years' time there will be completed the extensions of present railway enterprise, which will place Summerland on direct main-line service, with but an eight-hour run from Vancouver. The Kettle Valley railway is under construction, and will make direct connection through Summerland to the coast, and east by way of the Crow's Nest Pass line to the prairie provinces, which will constitute a second through C. P. R. line, and one said to be 200 miles shorter than the present main line, with much easier grades. The completion of this service will revolutionize fruit shipments, for

Summerland will then load direct for Winnipeg, and be but little over 48 hours away from that point.

Summerland's success at the Canadian National Apple Show was phenomenal. With the splendid car of mixed varieties it captured second place in the grand sweepstakes, being only outpointed by Kelowna with its straight car of Jonathans. In the mixed car class the Summerland car was first, and that in opposition to many other entries. In single-box classes, in plate displays and others many good prizes were allotted to Summerland exhibits.

The highest honors of the world have been awarded to Summerland apples at the Royal Horticultural Society's exhibition at London, England, where ten medals were won in five years. Last year at the National Apple Show, Spokane, Wash., the exhibit from Summerland also won a medal, in competition with every Western State in the Union. In the five years that Summerland has won at London, the Provincial Government has received the gold medal for its exhibit. A large part of this exhibit each year has been from Summerland, but private exhibits are not allowed to compete for this grand prize.

Kamloops

FROM a cattle range country, the Thompson River country in the vicinity of Kamloops is rapidly becoming an important fruit-growing centre, and their district display at the First Canadian National Apple Show would indicate that the people possess that enterprise and æsthetic taste which are always characteristic of progressive horticulturists.

Kamloops is called the inland capital. It is situated at the confluence of the North and South Thompson Rivers. It is midway between Calgary and Vancouver, and almost equidistant from the United States boundary line and the routes of the Grand Trunk Pacific and the Canadian Northern. It is on the main line of the C. P. R., and the C. N. main line of British Columbia will run through it. It is now a divisional point on the C. P. R., and that corporation is expending \$175,000 in Kamloops this year in adding to the roundhouse, establishing a large machine shop and enlarging its yard to twice its present capacity. The Canadian Northern will also make Kamloops a divisional point.

With these two railway corporations making this city their divisional headquarters, Kamloops will become an important railway centre, and with the

prospective continuance of the Canadian Northern south, and the extension of the C. P. R. line traversing the Nicola Valley to this city, a much more extensive area will be brought into direct railway connection with Kamloops, which will be the hub of railway lines in the interior.

From Savona in the west to Shuswap in the east, and for about 30 miles north and south of Kamloops the land requires no clearing. Except in the valleys, all the country is hilly, rolling hills rising to the plateau elevation of 3,000 feet above the sea, a few peaks reaching an altitude of 3,500. In the main valleys of the Thompson Rivers and their tributaries, extensive level areas exist, and on the higher levels there are many similar levels. Farmers and settlers have discovered that the rolling hills are superior in many respects to bottom lands. Irrigation is necessary in this part of the district. North of the point named and east of Sicamous, there is a dense forest growth to be cleared, but the rainfall is more plentiful and irrigation is not essential.

The soil varies according to locality. Generally speaking, in the valleys sandy loam and clay, with underlying stratum of gravel, predominate. Much of the soil constituent is glacial silt admixed with alluvial deposit. On the higher



PART OF THE PLATE DISPLAY—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver



KAMLOOPS DISTRICT EXHIBIT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver

bench lands the same features obtain, but there is an absence of alluvial deposit and the soil is in places gravelly—admirably adapted to fruit-growing.

Fruit-growing is successfully carried on in all parts of the district. Around Kamloops grapes and melons ripen in the open air. Peaches, pears, cherries, plums and apples grow to perfection. Fruit from this district won prizes in London and other parts of Great Britain, at Toronto, Spokane, New Westminster, etc., against competitors from all over Can-

ada. At Spokane prizes were carried off by this district against fruit-growers from all parts of the United States. There is an unfailing market in Manitoba and the Northwest, and also the northern section of the province. Over-production is an impossibility. Nursery stock can be obtained locally or from any one of a dozen nurseries in the province at prices more reasonable than many Eastern nurseries list them.

Kamloops will yet be a very important fruit-growing centre.

The Similkameen Valley

ONE of the prettiest district displays at the First Canadian National Apple Show was that of Kere-meos, in the famous Similkameen Valley of British Columbia, and reflected a great deal of credit on Mr. W. H. Armstrong, who spared no expense in its preparation, and so rendered a great service, not only to that Valley, but to British Columbia in general.

The Similkameen Valley is situated in the south-western portion of British Col-

umbia, nestling among the highest spurs of the Gold Range, and is traversed throughout by the Similkameen River, from which it derives its name. The general direction of the valley is east and west; it is about 125 miles in length and lies entirely within Canada.

The Upper Valley comprises about 30,000 acres of grazing and arable land. The arable land lies in the form of large bottoms or first levels, which rise above the streams and are benches or natural

terraces. They are adapted to growing hay, cereals and vegetables without irrigation, though irrigation is resorted to by the few.

The Lower Similkameen, or Keremeos country, as it is sometimes called, has an area of about 40,000 acres of agricultural land. On both sides of the river extensive bottoms of thousands of acres of the choicest black and chocolate loam land are found. The "bottoms" have in places some scrub timber, poplar, willow and alder, and where the land is open they are covered with a heavy growth of native grass of splendid forage value, which is used for a large part of the winter hay supply.

The Lower Similkameen, from Hedley easterly, including the Ashnola and Keremeos Valleys, comprises the horticultural as well as the largest farming section of the valley. The lands are either level or have a gentle slope toward the river. All tame grasses, wheat, oats, barley, and all classes of roots, as well as the full range of fruits, are extensively grown on these bottom lands. Some of our finest orchards, many of them 20 to 35 years old, are flourishing on these lands, and in most cases without irrigation. All lands on the lowest levels are naturally provided with an underground

"seepage" or oozing of water through the substratum from the higher lands in the rear; and withal this subsoil is of a "sweet" porous composition, producing the best conditions for plant and tree culture, and is not of that "sour," heavy or soggy condition often found in bottom lands.

Situated as it is in the extreme southern part of British Columbia, and having an east and west trend, the valley secures the beneficial effects of the wonderful "Chinook" breezes, which so admirably equalize the temperature, making it warm in winter and cool in summer. With a low altitude of 1,000 feet, and being sheltered among the lofty mountains, it enjoys a mild and genial climate the year round.

Being in the heart of the great "dry belt," the valley enjoys a vast amount of sunshine and clear skies.

The Lower Valley has a precipitation of seven to ten inches, 75 per cent. of which falls during April, May, June and July, the growing months.

The largest irrigation system in the valley is that of the Keremeos Land Co., which is today completed and constructed to supply about three thousand acres of land. This work took two years to install, and was supervised by one of the



SALMON ARM, B. C., DISTRICT EXHIBIT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver



KEREMEOS, B. C., DISTRICT EXHIBIT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver

best engineers in the West, Charles E. Stoess, whose work on this system has secured for him the position of consulting engineer for the largest irrigation system in British Columbia, as well as the encomiums of leading irrigation experts who have inspected the system. It is a gravity system of open canal and pipe syphons, and the water is carried eight miles to the point of distribution. The water is taken from the Ashmola River, a tributary of the Similkameen, and is of the purest origin and in never-failing quantity.

All kinds of cherries, peaches, apricots, plums, pears, berries, etc., are grown to a perfection that does not take a second place when compared with the leading fruit productions of the United States and Eastern Canada.

In the month of September, 1907, the Great Northern Railway operated the first regular train service into Keremeos. This branch of the Hill system is known as the Victoria, Vancouver and Eastern Railway, and connects with the Great Northern main-line at Spokane, 250 miles south and east of Keremeos, and is now

building to Vancouver through the Similkameen. When finished it will provide a direct short all-rail route to the coast, the Kootenays, and the prairie markets.

The Canadian Pacific Railway has a surveyed line through the valley, and is now building south through the Nicola Valley toward the Upper Similkameen, and will have a line in operation in a short time, which is expected to connect with the Crow's Nest line.

Being within two hundred miles of Vancouver, it will have an eight-hour service to that city, and will be in an enviable position as to short haul at low rates to all points on the prairies and on the Pacific coast.

"There is no market like the home market," is an axiom of trade. It is safe to say that no district in all of Canada but the Similkameen occupies the happy position of being most productive in the wide range of the field, garden and orchard products, with an immense and ever-growing local demand in its mining, railway and lumber industries.

Kelowna

KELOWNA'S record at many fruit shows is so brilliant that little need be said, more than a few references to their triumphs in competition with many of the best fruit-growing districts of the world. But when Kelowna carried off the sweepstakes prize of \$1,000 and a \$100 gold medal at the First Canadian National Apple Show with a *perfect score*, she won a victory that may be equalled, but never beaten.

Among the recent triumphs of Kelowna fruit may be mentioned the Royal Horticultural Society's gold medal, Banksian and Knightian medal, all of which have been awarded, and in some cases repeatedly awarded, to Kelowna fruit. The result of a more strenuous contest was the award to Kelowna by the Northwest Fruit-growers' Association at their annual meeting in 1907, when the big gold medal of the society was awarded for the best display of fruit. All the best districts of the best fruit-growing countries were there. Oregon, Washington and Idaho sent their best from Hood River, Wenat-

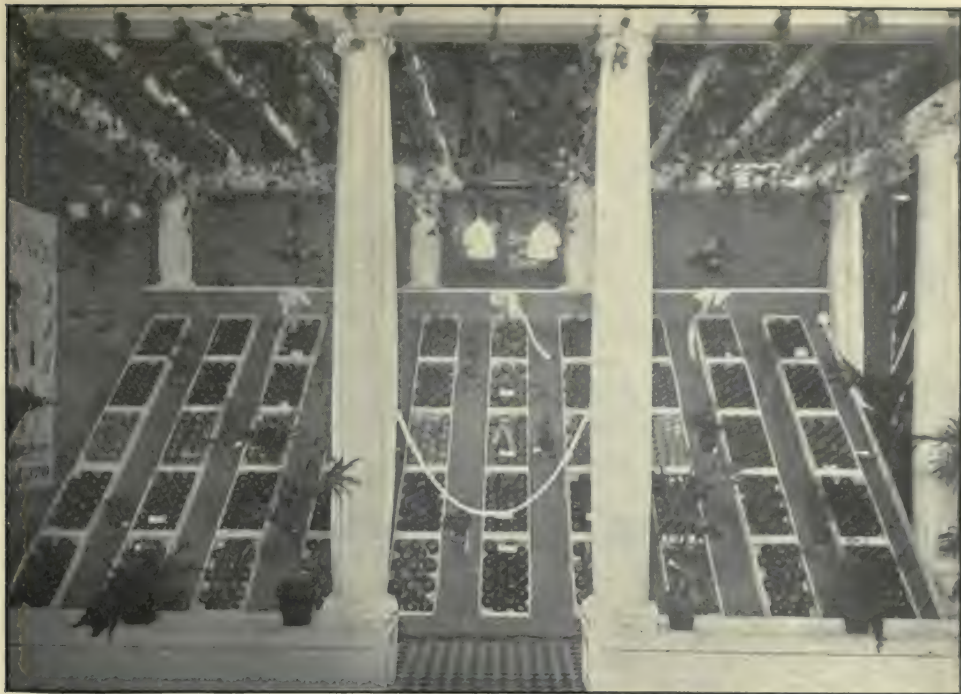
chee and other famous orchard lands. British Columbia sent of her best, and Kelowna secured premier place, with Hood River second and Grand Forks third. Surely it was a "battle of the strong"; it merely endorsed Kelowna's claims to "grow the best fruit."

But better still was the sweeping triumph gained by Kelowna fruit at the International Apple Show, held at Spokane, December, 1908. Facing competition from the best apple-producing districts of the United States and from other localities in British Columbia, and with only 72 boxes of apples from which to select exhibits—owing to the long distance to be traversed and the high transportation rates—Mr. F. R. E. De Hart, representing the Kelowna Board of Trade, made a splendid showing. Only 43 boxes of fruit were actually exhibited, as much had to be re-packed owing to the damage done by repeated transfers in transit, while other competitors had whole carloads on exhibition and from which to select; yet Mr. De Hart captured prizes to the value of \$4,370, or the astounding average of over \$100



GRAND FORKS, B. C., DISTRICT EXHIBIT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver



KELOWNA, B. C., DISTRICT EXHIBIT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver

per box, and actually took second place for the most prizes won.

Irrigation is a subject on which volumes might be written, but we confine ourselves here to how it immediately affects Kelowna and neighborhood. Irrigation is a guarantee fund, and any expenses entailed by it may be written off as insurance against drought and insurance of crops. The average rainfall of Kelowna is 13.27 inches; it is backed by ample supplies of water from the surrounding hills, conveyed on to the land by ditches, etc.

An average for six years, 1900-1907, of the rainfall and snow, as recorded by the Government Meteorologist at Okanagan Mission, gives as follows:

Average rainfall . . . 13.27 inches
 " snowfall . . . 38 00 "

As ten inches of snow equals one inch of rain, the total average precipitation is 17.07 inches of moisture. So Kelowna is by no means arid, and should there be any indication of drought, whilst others parch, the fortunate irrigator opens his headgate and secures a flow of

life-giving water for his crops and orchard.

The following table of monthly mean temperatures, over a run of years, will be of interest:

January . . .	28.09	July	65.35
February . . .	24.03	August . . .	64.04
March	36.06	September .	54.05
April	46.07	October . . .	45.03
May	54.02	November . .	35.03
June	61.02	December . .	31.02

A BEAUTIFUL CALENDAR.

The publishers of *The Youth's Companion* will, as always at this season, present to every subscriber whose subscription (\$1.75) is paid for 1911 a beautiful calendar for the new year. The picture panel reproduces a water-color painting of an old-time garden in a flood of summer sunshine, with a background of Lombardy poplars, through which one catches a glimpse of distant hills. The picture being in 12 colors, the tones of the original are faithfully reproduced.

Kootenay

NEVER in the history of West Kootenay was there a more united and effective effort made to bring the splendid fruit-growing capabilities of that large and important section of British Columbia before the world than at the First Canadian National Apple Show. Gathered from so scattered an area, the display made by West Kootenay's representative, Mr. J. W. Cockle, was not only creditable, but convincing to the thousands of visitors who daily visited the show.

The district of West Kootenay, which extends from the international boundary on the south to beyond the main-line of the Canadian Pacific Railway on the north, comprises three immense valleys divided by high mountain ranges.

The most easterly of these valleys, known as the Kootenay, which extends from Creston on the south to the head of the Duncan River valley, including the Kaslo district, has a length of 125 miles with a breadth of three miles, containing two hundred and fifty thousand acres of land suitable for raising all kinds of fruit, more pre-eminently apples.

The western valley of Arrow Lake and the Columbia River has an extreme length of over 200 miles, with an average width of over three miles, containing more than five hundred thousand acres of agricultural land, much of which is admirably adapted for fruit-growing.

The whole district may be classed as new. Little, if any, attention was paid to fruit-growing until recent years, but the results which have been obtained by the pioneer fruit-growers of the district have demonstrated the pre-eminent value of the land of the whole district for fruit-growing, not only along the lower levels of the waterways, but extending upwards along the mountain slopes. Great success has attended the efforts of the early experimenters, so that today it may be fairly claimed that any land lying between the waterways at an altitude of 1,400 feet and extending along the mountain slopes to an elevation of 4,000 feet is capable of raising fruit on a commercial basis.

"Watch Kootenay grow" in importance.



WEST KOOTENAY DISTRICT EXHIBIT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver



NANAIMO, B. C., DISTRICT EXHIBIT—FIRST CANADIAN NATIONAL APPLE SHOW

Photo by Bullen & Lamb, Vancouver

Nanaimo

THE "Black Diamond City" is certainly blossoming out in a new and unexpected way, as demonstrated by the enterprise of Mayor A. E. Planta, who brought a fruit exhibit to the First Canadian National Apple Show of which any locality with greater horticultural pretensions might be proud, showing that Nanaimo district possesses not only untold wealth in coal mines and herring fisheries, but that the surface affords rare opportunities for those seeking a pleasant home and the congenial occupation of fruit-growing.

Nanaimo has only just awakened to its fruit-growing possibilities. This is strange, because exceedingly fine fruit has been produced in the neighborhood in a careless sort of way for many years past. Everything—soil, climate and situation—is suitable for fruit culture. These natural advantages, backed up by brains and industry, will quickly make Nanaimo famous for something besides coal mining and herring fishing. Already fruit, notably apples, is grown successfully upon many of the five-acre lots in the district and upon most of the ranches,

but inducements which will now be offered will lead to scientific culture. Government experts report in high terms upon local possibilities in this direction.

The fruits which experience shows will flourish best in the neighborhood are apples, pears, peaches, prunes and plums. A first-class market is assured in the city of Nanaimo itself. Lastly, it can be authoritatively stated that 10 acres of land in the Nanaimo district, wisely handled, will support a family.

To the seeker of broad and fertile plains small encouragement is offered, for the lands are mainly stump and tree clad, and require time and money to convert them into very extensive green-clad fields; therefore the man to interest in this branch of development is the Eastern farmer with from \$800 to \$3,000 who is looking for an opening for diversified farming in a good climate, and in a country where he can build a permanent home and feel sure of a comfortable living and the prospects of bettering his condition as years go by. The cost of land in the vicinity of Nanaimo is reasonable.

Nanaimo is the nearest point on Vancouver Island to Vancouver city, less than forty miles away, the trip being made back and forth every day by one of the C. P. R. ferry steamers. The route between Vancouver and Nanaimo is so direct and the entrance to the harbor so ample that this trip is made every day, rain or shine, in calm and stormy weather. Not once during the past twenty years has the daily trip between Nanaimo and Vancouver been interrupted on account of the weather, and the conditions of travel are so safe that no accident has ever occurred. Travellers en route to any part of Vancouver Island will find the route between Nanaimo and Vancouver the safest, quickest and most agreeable passage of any, and from Nanaimo any part of the island can be reached by railways which are now running north, south and west.

A vigorous policy of development has been adopted by the C. P. R. management. A new line from Nanaimo to Alberni, a distance of 57 miles, will be completed this year, and another line is in course of construction from Nanaimo to Comox and Campbell River, which will make a further extension of over 70 miles.

The city of Nanaimo is famous as the location of the largest coal mines on the Pacific coast, and yet one could live in the place for years and unless they were told there were coal mines underneath they would never know it. There is no suggestion of the usual earmarks that go with a coal-mining town, no coal dust, no unsightly "works," no untidy reminders of the great industry that flourishes in the city.

With its diversified resources, this part of Vancouver Island should become densely populated and the centre of numerous and varied industries.

Burton, B. C.

A Land of Opportunity

IN the "Glorious Kootenay" district, where the Columbia River broadens out into lower Arrow Lake and ranges of the Selkirk Mountains rise for thousands of feet from the lands surrounding the little town of Burton, there is a tract of fertile land which affords a sure foundation for abiding and substantial prosperity. This tract has become known as the Burton Orchards, where the serene atmosphere and absence of strong winds permit the growth and bloom of the apple in all its beauty and perfection.

"The climate of Italy, the scenery of Norway," is the summary by an eloquent and enthusiastic visitor of his impressions of Kootenay. Like all generalizations, the description is not literally accurate, but it is apt, nevertheless, and tersely conveys to those who have not yet visited the district, which its admirers proudly describe as Glorious Koot-

enay, a thumb-nail sketch of the salient characteristics that first strike the appreciative tourist; for, in regard to climate and to the beauty and grandeur of Nature's handiwork, Kootenay is the favored child of the gods. . . . For the lover of the beauties, Kootenay is Elysium. The panorama of mountains impresses its charm and grandeur upon the least observant; awe-inspiring peaks, whose snow-clad crags pierce the clouds, alternate with more friendly and softer heights, at the foot of whose sombre tree-clad slopes nestle comfortable homes and fruitful well-tended orchards, which add to the scenery an air of homeliness and progress that is a pleasant contrast to the more severe spectacle of precipice and wilderness. . . . The climate of the Kootenays adds much to their attractiveness. By many the weather is regarded as the most delightful in the world. The winter

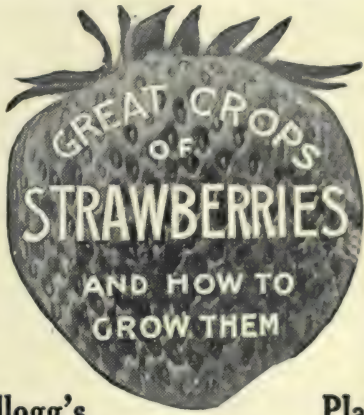
is just long enough and cold enough to be invigorating and to provide that contrast that is the spice of life, and that is so necessary to good health and energy and high spirits. As compared with almost all other districts in Canada, the winter is short, seldom lasting longer than three months, and the thermometer rarely touches zero. The climate is not the least of the attractions of the Kootenay, and what is important, it is conducive to remarkably rapid and healthy vegetation. The precipitation is adequate for all purposes, irrigation is unnecessary, and fruits and vegetables flourish amazingly.

The delights of scenery and climate are, however, merely incidental to the more substantial advantages with which Kootenay abounds. Kootenay is the land of opportunity, a country of vast and varied resources. It holds out to the capitalist and to him whose reliance is in his strong right arm possibilities of wealth, or, at the least, comfort and competence. No district makes a wider appeal. Men of all classes of society, and of all tastes and proclivities can find in Kootenay abundant outlet for their energies and an assurance of success.

For the man who seeks an agreeable and profitable occupation, amid congenial surroundings, and within easy reach of all the resources of civilization, fruit-growing in Kootenay has irresistible attractions. It is thus not only a pleasant occupation, but an exceedingly profitable one as well. And in addition to the actual returns from the crop must be added the steady appreciation in the value of land. For years past the eyes of the world have been attracted by the opportunities of the prairies, but it is beginning to be understood that among the mountains are to be found spacious and fertile valleys, a more genial climate, and opportunities for the creation of wealth that are unrivalled, so that Kootenay is now a magnet that is attracting even the successful settlers of the prairie. The wave of migration into the Kootenays is steadily gathering force, and the natural and inevitable result is a constant and substantial increase in the value of fruit lands. It is those who are early in the

field who will reap the fullest advantage of this increment.

Of all lands fruit lands are the most valuable, and advance to the highest figures that are paid for acreage, because fruit lands produce more dollars to the acre than lands of any other description. It is self-evident that land that will produce under cultivation from \$100 to \$500 an acre annually is valuable, even in its improved state, and is bound rapidly to advance in value as the fruit industries of the province continue to develop and the country becomes more densely populated.



FREE BOOK

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FREE BOOK

Chilliwack

VISITORS to British Columbia should not fail to see the famous Chilliwack Valley, or failing this, communicate with the Board of Trade for that district. Chilliwack is seldom behindhand, but they neglected to comprehend the great publicity value of the First Canadian National Apple Show in time to get in an exhibit that would be a credit to that beautiful valley. But the valley is still there, and will be heard from in the future. Perhaps when the National Apple Show is held in one of the Eastern provinces the people from the south bank of the Fraser River will surprise some of the districts that carried off honors at Vancouver in the first week of last month.

The Chilliwack Valley offers, perhaps, more inducements to the farmer or dairyman than any other part of British Columbia, and exceptional advantages for the production of many varieties of fruit. It is not dependent on one industry alone, as orchard districts so often are. Milk, butter, cattle, horses, timber, hay, oats, barley, roots and vegetables, sheep, swine, poultry and hops are among the many products that contribute to the wealth of this versatile valley.

In that beautiful, fertile plain, surrounded by splendid high, protecting mountains, are to be found orchards of fruit equal in flavor to the best products of the Okanagan, growing without the aid of irrigation. The absence of artificial irrigation means a great saving per box in the cost of production. Enormous quantities of fruit are raised and shipped to the coast cities, as well as to the prairies. Chilliwack cherries and prunes are famous throughout the whole Western country, and many carloads are shipped annually to Winnipeg and distributed from there. Many varieties of apples, plums, pears, etc., are grown,

while peaches are more or less extensively raised, and small fruits and strawberries are wonderfully heavy bearers.

The city of Chilliwack itself is a town of some 1,500 inhabitants, and is the market for the produce of the 6,000 farmers who cultivate the surrounding district. Within the last month or so a great increase of prosperity has come to the already very prosperous town. The completion of the new carline from New Westminster to Chilliwack is the cause of this boom. Situated only 70 miles from Vancouver and enjoying, as it does, a twice daily car service to and from that city, its fruit-growers and farmers now find a ready and easily accessible market for their produce, and at the same time it becomes a still more convenient seat of residence than it was before. It has telephone service in practically every house in the valley, with direct connection with the coast cities.

Among the manufactures are a canning factory with a capacity of 20,000 cases (full pack this year); two large creameries, annual output 550,000 lbs. butter; lumber mills, ironworking plants, sash and door mills, etc. It has one of the most successful high schools in the province, and 14 public schools throughout the valley. Five leading banks are represented, owning fine properties. The Canadian Northern Transcontinental Railway is now building through the valley, also the Great Northern from Spokane to Vancouver.

You cannot afford to overlook Chilliwack in making a home or an investment. The Valley has been the banner district for over 40 years, and will always be one of the wealthiest districts in the province, as well as one of the most delightful places in which to live.

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IN ITS SYMPATHY AND INFLUENCE.*

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Vancouver, B. C.

Maxwell Smith, Editor.

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LARGEST APPLE AT THE FIRST CANADIAN NATIONAL APPLE SHOW, VANCOUVER, B. C.,
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Let our English friends compare this with their "Giant" weighing 27 ounces, and which caused a stir in
British fruit circles.

The Fruit Magazine

VOL. II

JANUARY, 1911

No. 4

Cold Storage and Pre-cooling

By A. B. STUBENRAUCH
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THERE has been much discussion recently regarding the storage of food products, and especially of the holding of food materials in cold storage. Most of this discussion has been in connection with the attempted investigations of the increased cost of living. It has been widely asserted that cold storage is largely responsible for this increased cost of living, as by taking advantage of cold storage facilities a few corporations or individuals are supposed to be able to buy up and to some extent "to corner" food necessities, hold them in storage, and thereby control the prices and the marketing. This assertion may be true in some instances. There has been so much said about this side of the discussion that one may have lost sight of any other point of view.

Legal regulation of the cold storage of food products is suggested. It has been proposed to prohibit the sale of food products held after a certain length of time.

In most of the proposed laws the time limit has been arbitrarily set. Bills have been introduced before Congress having in view Federal control. Many states have laws in view for regulation within states. It seems almost inevitable that some legal regulation will be attempted. Unless it is very carefully considered, legal regulation is likely to work hardships on both producer and consumer, and may even defeat the objects which such regulation is intended to accomplish.

I am not attempting to promote the cause of cold storage warehousemen in any way, except as this cause may be just and reasonable.

To adopt an arbitrary length of time beyond which all foodstuffs shall not be kept is unreasonable. The length of time which foodstuffs can be held in sound and wholesome condition is different for different classes of products. Different standards would have to be adopted for eggs, poultry, meat, fruits and vegetables. But even this will lead to confusion and trouble if the period is adopted without some consideration of the condition of the products at the time they are placed in storage. This manifestly increases the complexity of the problem, and unless the question is very carefully considered, the regulation by-law is likely to defeat the object it has in view, which is, or should be, first of all, the prevention of the sale of unwholesome food.

There can be no doubt that attempts have been made by unscrupulous persons to take undue advantage of market conditions and to increase the price of food necessities. Moreover, abuses have been committed in holding foods too long and then marketing them after they have become unwholesome. These are properly subjects for legal regulation.

But there is another side to the discussion. We have heard so much about the unfavorable side that we have almost forgotten that there is anything favorable to say about it. I wish to point out some of the things which require careful

consideration and which are especially important to the producer.

Cold storage lengthens the season of marketing a product.

Cold storage increases the territory over which a perishable product may be marketed.

Both of these points are all-important to the producer, especially to producers on the Pacific Coast. The local demand for fruit on the Coast is infinitesimal in comparison with the quantities produced. Markets must be found at a distance. Moreover, the quantities produced are fast becoming more than the various markets can consume during the normal season of the product. The apple industry of the United States has already reached that stage. If all the apples produced had to go into immediate consumption on account of there being no means of holding them for a longer period of distribution, it will readily be seen that the markets would be overstocked with apples, and the prices would be far below the cost of production. We should have tremendous quantities for a comparatively short time, and then a great scarcity. During the time of plenty the fruit would be cheap, and during the time of scarcity it would hardly be obtainable at any price. Any which could be obtained would command fabulous prices.

By means of cold storage we are able to regulate this condition, and instead of having alternate seasons of plenty and scarcity we now have quite a steady supply of fruit at prices which are fairly reasonable to both producer and consumer. In fact, apples are now obtainable the year round. The grower is able to find a market at fair prices for all he can produce, and the lengthening of the marketing season places the fruit within reach of all. Were cold storage facilities withdrawn from the apple industry the result would be disastrous to the grower; storage facilities have made this fruit one of the staple foods. By means of refrigeration we have been enabled to introduce our fruits into distant markets, and so to regulate the supply that a fairly uniform distribution

can be made. The necessity for such careful distribution and extension of markets is likely to become more pronounced in the future. During the past few years enormous areas have been planted, and new districts are being opened up every year. This means a greatly increased production within the next few years. Consequently competition will be stronger, and unless some system of distribution and extension of markets is introduced, there is likely to be overstocking of the principal markets.

These conditions are pointed out to show that the cold storage house has practically become a necessity to the apple industry. The cold storage house must be considered the ally of the producer and the shipper.

INVESTIGATIONS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE

During the past eight years the Bureau of Plant Industry of the United States Department of Agriculture has carried on investigations of the cold storage of fruits and especially of apples. During these investigations many important facts and principles have been developed, most of which have had an important bearing on the cold storage and warehousing of fruits. These investigations are still in progress, as there still remain important factors to be determined. Some fruits have not yet been studied, and further, all sections of the country have not yet been included. Naturally the first work was done on Eastern and Central Western fruits, and as funds have been provided and experience has been gained the work was extended to the other sections of the country. So far, practically nothing has been done in the Northwest district, comprising the important fruit producing districts of Oregon, Washington, Idaho, Utah and Montana.

Certain important general principles have been developed from the work, and these principles are applicable to all sections with modifications to suit local conditions.

It has been found that the condition of the product at the time it is stored

has a most important influence on its behavior in storage and the length of time it may be held in good condition. This has reference to the regions where the fruit is produced; to the stage of maturity of the fruit at the time it is picked; to the care with which it has been picked, handled and packed; to the promptness with which the fruit is placed in storage and cooled. All these factors are under the control of the producer, the packer, or the shipper. The duties of the warehouseman or the cold storage man follow these, and have reference to the proper regulation of the temperatures of the rooms, ventilation and handling of the cold-storage house itself. It is the warehouseman's business to see that the proper storage temperatures are uniformly maintained. A fluctuating temperature—if it fluctuates to a considerable extent—may be most injurious. Another important factor in the successful storage of fruit is the maintenance of uniform conditions throughout the storage rooms themselves. This is plainly the duty of the warehouseman. Where the rooms are improperly piped or insulated the temperature will not be uniform in the rooms. Parts may be too cold, parts too warm. This is especially true in very large rooms. This does not necessarily mean that small rooms are most desirable and efficient. Quite the reverse: under proper conditions it is relatively easier to maintain a large room in a uniform condition than a small one, because of the smaller proportion of wall space to air volume.

The various factors which have been mentioned as having important influences on the keeping quality of fruit products will be discussed in the order named.

INFLUENCE OF THE PLACE OF PRODUCTION

There is a widespread opinion that the region producing a variety of fruit has little or no influence upon its behavior in storage. The investigations of the department show that such a view is erroneous. A great many varieties have been studied, and these have been

obtained from different districts of the United States. It has been found that the place and conditions of production have a material influence on the keeping qualities of the different varieties. Moreover, the soil upon which the fruit is produced affects the keeping qualities in cold storage. Differences of from one to three months in the length of time a variety may be held in good condition have been found to be due to the influence of different places of production.

INFLUENCE OF THE METHOD OF CULTURE

The methods of culture and care in the orchard are also factors affecting the keeping qualities of the fruit. The quality of the tillage the trees are given, the pruning, the age of the trees and the climatic conditions may be governing factors in the behavior of the fruit in storage. Large, coarse and sappy fruits produced by young trees do not have as good keeping quality as the same varieties grown on older trees. It has been found, especially under eastern conditions, that trees with thick heads and branches which prevent the fruits from maturing uniformly may yield a large proportion of green, poorly colored fruits, which do not hold well in storage. This is plainly a factor which may be controlled by a different orchard treatment. Opening up the trees in order to give more light and air will materially influence the length of the cold storage season of the product. It has been found also that late cultivation, keeping the trees in active growth late in the season, prevents the proper maturing of the fruits. This is not likely to be so important a factor in this region except where climatic conditions similar to eastern humid summer conditions prevail. In irrigated sections the moisture conditions are under the control of the grower. If he irrigates and stimulates growth at the time the fruit is maturing he will bring about conditions which result in the production of sappy, poorly colored fruit of low keeping quality. In sections having dry summers, but depending upon tillage for the maintenance of proper soil moisture

conditions, the effect will be opposite unless cultivation is carefully done. In orchards where cultivation and tillage are not thoroughly done there is likelihood of the trees being under stress from the lack of moisture at the end of the dry season. Fruit from such trees has low keeping quality in storage.

Any conditions of soil, climate or orchard treatment which result in the production of abnormal fruits may be governing factors in their cold storage behavior. These factors are ordinarily not considered in selecting fruit for storage. If they were taken into consideration, much loss would be avoided.

It may not always be practicable for the warehouseman to consider these factors due primarily to the conditions of growth and production. Fruit is mostly purchased by jobbers and wholesalers who do not, as a rule, know anything about the history of the fruit prior to the time it is received by them. The only way that loss from deterioration may be avoided in these cases is to keep close watch on the fruit during the season, and to dispose of it before it has gone too far.

Fruit is a living organism, which has a definite length of time of carrying on its life functions. As long as these life functions are active, the fruit remains in a vital condition and is fit for food. After the life processes have become weakened and exhausted, death of the fruit takes place, rapid deterioration results, and the fruit is unfit for food. The vital processes of the fruit go on normally while the fruit is on the tree, unless the tree is in distress. When the fruit is severed from the tree the life processes are hastened while the fruit remains at relatively high temperatures, so that when the fruit is picked, the ripening and life-processes are quickened, and unless some means are taken to control or to reduce these processes the death of the fruit ensues within a comparatively short time. When the fruit is stored at a low temperature, the vital processes are very materially retarded; they do not entirely cease, but continue slowly, the rate de-

pending upon the character of the fruit and the temperature at which it is held. It follows that when the life processes are materially reduced, the fruit will remain in good condition a greater length of time. This is the principle upon which the cold storage of food products is based.

The low temperature may also retard the growth and development of various forms of decay or rot, due to fungi, which grow upon the fruits and destroy them. Most of these fungi cannot germinate at the low storage temperature (32 degrees Fahrenheit), but when once started they continue slowly to develop and may entirely destroy the fruit in the storage rooms. The most common forms of decay, however, are dependent wholly upon the character of the handling which the fruit receives in preparing it for market. The work of the Department of Agriculture has shown that these forms of decay are due to fungi which have not the power to penetrate the unbroken, sound skin of a healthy, normal fruit. The decay starts at some injury to the skin, usually a break, scratch, heavy bruise, tear, some mechanical abrasion made in the picking, grading or packing. Worm holes, insect bites, or punctures from the branches also allow the decay to gain entrance. Once started at such breaks, the fungus continues to grow, even at a temperature very near the freezing point. Other forms of decay which are not dependent upon abrasions to gain entrance into the fruit are dependent upon proper moisture and heat conditions for their germination and growth. By reducing the temperature to the point at which the fungus cannot grow, the disease can be held in check.

Under orchard treatment and conditions we must consider spraying for the control of insects and fungus diseases. Where the spraying work is not thorough and efficient a considerable proportion of the fruit may be injured by insects and consequently rendered susceptible to decay. All such injured fruits should be religiously excluded from fruit intended for storage. Where

the insect or disease injury is primarily not to the fruit itself, it is just as important that the spray work be efficient. Any insect or disease which interferes with the normal vitality and growth of the trees likewise affects the quality of the fruit. This is a well-known fact to all up-to-date orchardists, but the effect on the storage quality of the fruit is not so well appreciated.

SEASONAL INFLUENCES

It is a well-known fact that during unfavorable seasons the quality as well as the quantity of the fruit may be affected. In case of unusual drought the man who irrigates has some advantages over the grower who is wholly dependent upon natural weather conditions. Following destructive frosts the crop may be thinned to such an extent that the remaining fruits are overgrown and sappy, and consequently of low keeping quality in storage. Fruit produced under unfavorable seasonal conditions must be carefully watched during the storage period, so that it may be sold and consumed before it has deteriorated to any great extent.

PROPER STAGE OF MATURITY FOR STORAGE FRUIT

The investigations of the Bureau of Plant Industry have shown that fruit which is fully matured and well colored holds better and longer in storage than immature, poorly colored fruits. When the bureau investigations were begun the common practice was to pick fruit intended for storage before it was fully matured. A systematic study on a large scale has shown this to be erroneous. Green, immature fruit is subject to scald, and if very green, will shrivel in storage, while the same variety fully matured holds much longer and in better condition. This principle has been found to hold true for all kinds of fruits except pears and lemons. These are apparently the only fruits which are better when picked before full maturity or ripeness, as the term is ordinarily interpreted. By full maturity is meant full color, firm, with the seeds fully grown and colored. Overripeness must be

avoided as much as immaturity. In some sections it is a general practice to allow the crop to remain until all the fruits are fully colored. There is danger when this is done that part may become overripe and consequently have a low storage—or even shipping quality. It is best, especially with the earlier ripening varieties, to make more than one picking, selecting each time the fully colored fruits and allowing the undeveloped to remain. The fruit grown on the outer branches develops more rapidly and consequently ripens first. Much more uniform storage-holding quality can be obtained by keeping these fruits separately, unless the trees are open-headed and there is a uniform development throughout.

INFLUENCE OF HANDLING ON KEEPING QUALITY

The bureau investigations have shown that a direct relation exists between the type of handling and the occurrence of decay in both storage and transit. As has already been mentioned, the common forms of decay are caused by fungi which gain entrance through some form of mechanical injury to the fruit. Fruit is most commonly injured in preparing it for market, in the picking, grading, hauling and packing operations. In general, most growers appreciate that fruit must be carefully handled, but they have no conception of the amount of injury ordinarily done unless extra care is used. In the course of the bureau investigations many instances were found where growers who had the reputation of handling carefully, were really injuring a larger percentage of their product through ignorance or oversight. From 10 to 15 per cent. of apples were found to be injured, and in the case of citreous fruits the percentage of injuries were often much higher. By using great care in handling the orange and the lemon in California the losses from ordinary decay, which formerly averaged fully 5 per cent. in these fruits, have been wholly avoided. The bureau investigations have made a great many demonstrations of the efficacy and practicability of careful handling in eliminating decay

with uniformly consistent and successful results.

Good fruit, attractively packed and gotten to market in sound condition is the basis of the successful marketing of fruit crops. This is of special importance on the Pacific Coast, where the marketing problems are of wide distribution, the solution of which is dependent upon the delivery of fruit in sound condition to distant markets. The orange and lemon growers of California have found it necessary to change their methods of handling and carrying on their business operations in order to insure the preparation of their crops for market in such a way that the natural decay-resisting qualities of the fruit may be preserved. The effort has been well repaid. Losses from decay have been practically eliminated, and the value of the reputation of soundness and holding quality which the fruit has gained is beyond estimation in terms of dollars and cents.

The apple, pear, peach, plum, cherry and grape are far more easily injured than the orange or lemon. The necessity for great care in handling these fruits is therefore all the more urgent. In California all up-to-date citreous growers and handlers use gloves in picking, grading and packing operations. If this practice does not prevail in the Northwest it should be adopted, as in this way many types of injury may be avoided. In the citreous investigations sand, gravel, dried twigs and dirt in the picking bags and field boxes were found to be responsible for much abrasion of the skin of the fruits, which was always followed by serious decay. The tender skin of the apple and pear is very susceptible to this type of injury. For this reason, if these fruits are wiped before they are packed, great care must be used to avoid abrasion of the skin; the slightest scratch or puncture is sufficient to allow the fungus to gain entrance. In grapes the commonest injury occurs at the pedicel, and injury at that point is easily done unless care is used in handling the bunches both in picking and packing. Much of the injury to grapes may be

avoided by lifting and handling the bunches only by the main stems. The bureau work has shown that it is wholly practicable to handle this delicate fruit without injury and with very little extra effort or expense.

The urgent necessity for the greatest care to avoid injury in preparing fruit for storage or shipment cannot be too strongly emphasized. This is the foundation upon which rests the successful marketing of fruits over wide distances.

INFLUENCE OF PROMPT COOLING

As has been mentioned above, fruit is a living organism, during the normal growth and development of which certain physiological and chemical changes take place within the fruit itself. These changes constitute ripening, as the term is ordinarily interpreted. Up to a certain point, flavor and quality improve and the fruit is considered as ripe. After this point is reached there is a gradual decline and death and deterioration take place. Flavor and quality are lost, and if the process continues the fruit breaks down physiologically or is destroyed by decay or fermentation. It has been further shown that when the fruit is removed from the parent tree or plant, those life and death processes are materially hastened while the fruit remains at relatively high temperatures. A reduction of temperature retards these vital processes—they go on very slowly in storage; if they were entirely stopped the fruit would soon die and break down physiologically—and gives the fruit a longer term of life. The promptness with which the cooling is done has a material influence upon the length of time the fruit will remain in good condition. The Bureau of Plant Industry investigations have demonstrated that apples placed in storage and cooled promptly hold in good condition from one to three months longer than the same varieties delayed 10 days or two weeks, if the temperature is rather high. This point is therefore of the utmost importance, especially with a variety like the Jonathan, which ripens in the early part of the season while the weather is warm.

The prompt cooling of fruits for ordinary shipment is also of urgent importance. Temperature records show that it requires several days for the fruit to reach a point where ripening and decay will be arrested when ice alone is depended upon both to cool the fruit and to hold it cool. Frequently from a third to a half of the transcontinental trip may be made before the body of the fruit is cooled sufficiently. With fruit packed and loaded warm the ripening processes will have materially advanced and decay may have started before the temperature of the fruit is lowered to the desired point. It follows that if the cooling can be done more promptly and quickly than the ice of the car alone will accomplish, the fruit will carry farther and in better condition. To this system of prompt cooling the term "pre-cooling" has been applied. The process was first used on fruits by Powell in the bureau investigations in Georgia in 1904. Since that time the investigations have been continued and extended, and pre-cooling is now being used on commercial shipments in several sections of California.

There are two systems of pre-cooling: one is done in cold storage rooms before the fruit is loaded, and the other after loading by blowing very cold air through the loaded cars.

The first system can be done only by growers, shippers or by associations of growers or shippers. While the system requires one extra handling of the packages, it has some advantages over the car pre-cooling system which can be done only on a large scale, and as it involves the handling, movement and delay of loaded cars, car pre-cooling is probably only practicable of successful accomplishment by the transportation companies. Much work remains yet to be done before it can be definitely decided which system is best for all concerned. From the standpoint of the effect on the condition of the fruit, the pre-loading cold storage-room system is advantageous in that the cooling can be done promptly, thoroughly and uniformly.

With the car-cooling system more or less delay is inevitable in assembling the cars at central points where the pre-cooling plants must necessarily be located. If this delay is considerable in warm weather it may practically nullify the benefits to be derived. Another disadvantage is the difficulty of uniformly cooling the load. So far, it has been found practically impossible to distribute the air blast so that it will reach every part of the car uniformly, unless the methods of loading are materially changed. Some packages of the load are reduced to the danger point of freezing before others have been sufficiently cooled. The general practice is to cool as low as possible and to depend upon an equalization throughout the load to bring the temperature down to the desired point. In this way the extra cooling done on some packages is expected to reduce those not sufficiently cooled. There is ground for believing that this unequal cooling may be injurious, especially to such classes of highly perishable fruits as grapes and perhaps berries.

The advantages of the car-cooling system are that it requires no extra handling of the packages, and it relieves the grower or shipper of the responsibility of doing the work. The two methods are being fully investigated by the department, and the work will be continued until some safe and definite conclusions are reached.

The department investigations, so far as they have gone, show that pre-cooling, when promptly and efficiently done, has a marked influence on the carrying and holding qualities of fruits intended either for ordinary shipment or for storage.

Pre-cooling is destined to take a very important place in the shipment of fruits. It will be an important factor in the solution of many of the problems which confront the fruit-growers of the Northwest. Plans are being made for investigations in Oregon and Washington next season, and this work will be taken up and extended as the funds and equipment of the bureau will permit.

Editorial

A Happy New Year

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AS the old clock strikes the midnight hour at the close of the dying year, and we involuntarily glance up at the face of the faithful old servant of Father Time, we see both hands pointing upward from the dead past to the living future, and we are constrained to brush aside the memory of our disappointments and failures, and taking fresh courage, hope rises triumphant and we face the battle of life anew with a determination born of new hope and enlarged opportunities. *The Fruit Magazine* has faithfully endeavored to fulfil its mission in the world during the past year, and will continue to merit the warm welcome which it has received heretofore. We trust that the reader will help keep the lamp of progress, good cheer and development burning brightly in our sanctum by promptly remitting the price of a year's subscription, which is only \$1.00 to any address in Canada or the United States, and \$1.50 to Great Britain and all other countries.

We shall be glad to receive items of real public interest concerning the growing, marketing or transportation of fruit from our subscribers in any part of the world, and shall at all times endeavor to co-operate with our patrons in promoting the best interests of the fruit industry, as well as producing a magazine that will be interesting and instructive to all classes of readers. Extra copies may be ordered through local news dealers or direct from this office.

May we all look back at the end of the present year with the knowledge that we have done our part for the good of humanity.

WHY DAM IT

THE future of Vancouver as the great Pacific ocean port of the Dominion of Canada is of interest to readers of *The Fruit Magazine* in the persons of fruit-growers, fruit dealers, and fruit consumers all over the Dominion, and as the Federal Government are expected to spend large sums of money in harbor improvements on Burrard Inlet and Fraser River, they have a right to ask whether the people of Vancouver are taking the necessary precautions to conserve the natural advantages that already exist in and about this city of untold possibilities.

In October, 1909, *The Fruit Magazine* uttered a warning note to the citizens of Vancouver against allowing that splendid natural basin known as False Creek to be entirely filled up for railway yards, instead of dredging out a channel through to the harbor on the north side of the city. Referring at that time to the extensive railway construction projected in Western Canada, we stated that: "All these railways and many steamship lines will have terminals in the rapidly rising seaport city of Vancouver, and the game now being played between the Vancouver City Council and some of these railway companies over the disposition of the bed of False Creek is interesting. . . . But if, in these negotiations, Vancouver fails to safeguard her right to some day cut a ship canal from the present head of False Creek across the narrow neck of land to Burrard Inlet, she will make a mistake which her citizens will regret for all time to come."

The game has been played ever since with a good deal of vigor by both parties, and already the citizens have umpired one round in the contest by voting to ratify a certain agreement between the city and the Great Northern Railway, which provides for the filling up of the bed of False Creek as far west as Main

street. False Creek is an asset which many cities would give millions to possess. Vancouver city owns very little waterfrontage, and if, instead of filling in the whole of the tideflats, a ship canal 200 feet wide had been projected up the middle of False Creek and across the isthmus between Campbell and Raymur avenues, to Burrard Inlet just west of the Sugar Refinery, it would have been a scheme worthy of Dominion Government assistance, and would have provided valuable wharfage through the heart of what will be the business portion of Greater Vancouver. There is room only for warehouse trackage within the city in any case, and the other railways will eventually have to follow the example of the C. P. R. by going outside for their yard room, shops, etc. Do the people of Vancouver know that unless they spend a fortune in building great conduits to carry the sewage miles out to sea, the drainage of a densely populated portion of the city will be churned back and forth by the tides at the mouth of False Creek—if the present scheme is carried out?

With a canal from Burrard Inlet through the creek, sewage might be discharged into it at will, with the assurance that the ebb and flow of the tide would keep the channel sweet and sanitary at all times, the flow of water being regulated by means of locks, so as not to permit a rush sufficiently swift to interfere with shipping operations. We believe this to be the proper solution of the False Creek question; but if the railways have the bed of the Creek east of Main street beyond recall, then by all means let the City Council see to it that a large, open, well-constructed trunk sewer be provided from Burrard Inlet, between Campbell and Raymur avenues, through the proposed filled-in flats to the salt water west of the dam at Main street, allowing the sea water to flow freely through for sanitary purposes. But why dam it at all, and thereby dam the city's future interests as well, by carrying out the present scheme, which only provides a present-day makeshift advantage?

GOLDWIN SMITH.

THE philosopher of the Grange, who for many years was permitted to pursue his literary work in peace and quietness under the shelter of the maple leaf, after he had given the best years of his life to the service of foreign institutions, seems to have taken the precaution to insure the publication of reminiscences after his death, without regard to the sensibilities of those who have a right to hold opinions of Dr. Smith and his contemporaries which were not entertained by the Anglo-Canadian-American sage of Toronto himself.

It is usual with ordinary mortals—to say nothing of minds basking in the rarefied intellectual atmosphere of philosophic thought—to become mellow, tolerant and charitable towards their contemporaries as they approach the end of life's journey. But not so with Goldwin Smith, a circumstance which may tempt more than one kindly disposed scribe to tell what he believes to be the truth about the late philosopher of the Grange. In recently published reminiscences by the late Dr. Smith, he opens wide the floodgates of his vituperative hatred of the British statesman Disraeli in a manner which was neither merited by the victim of his vitriolised pen nor worthy of a mind essaying to guide the destinies of his race. After marshalling all the alleged facts and circumstances that he could muster to blacken the fame of Lord Beaconsfield, Professor Smith thus concludes about his deceased enemy:

"His cleverness nobody denies. It was shown by leading the gentlemen of England out of the path of honor. But his whole course was one of manoeuvring with a selfish aim. Long as was his career, not one good measure of importance bears his name. Nor in his speeches is there anything high or noble, anything that can be quoted for its sentiment, anything that shows genius, unless it be the genius of the literary stabber."

And is it not a fact that Dr. Goldwin Smith never grasped the possibilities and national aspirations of the country

which afforded him peaceful shelter and protection during the declining years of his life? Did he not arrogantly ignore the self-respecting intelligence of the Canadian people and point them to what he considered the ideal destiny of the Anglo-Saxon race by a route which was repugnant to the spirit of progressive, independent, self-reliant Canadianism? And still we admired his master-mind and even loved him for his literary genius and scholarly attainments. But so far as any real service to Canada is concerned, the land which presented the greatest opportunity and which had the strongest claims upon him, the name of Goldwin Smith will go down into history as a colossal intellectual failure; a scholar of the first rank who brought to the new world a master-mind, trained and equipped for great and noble work, who absorbed the exhilarating atmosphere of a progressive, free and enlightened people, but who failed to put himself in harmony with the native forces, ideals and aspirations of a stalwart young Dominion whose national heart was throbbing with the buoyancy of youth, and whose pent-up energy and natural wealth afforded the first great opportunity in the world's history for rapid national development along the lines of peaceful industrial expansion. Goldwin Smith's prophetic vision of the future was dimmed by his apparent inability to dissociate its probabilities from the barbarism of the past. He failed to recognize that modern civilization made it possible for a nation to be born and wax strong without passing through the agonizing travail of bloody wars and human strife, and that mutual respect and the recognition of the individual rights of neighboring nations of moderate proportions are stronger guarantees of peace and prosperity than political unions. We believe with the late Dr. Smith that the future will see the English-speaking nations reunited in a strong and lasting peace compact, but that will never be accomplished through an attempt to stifle the national development or sacrifice the individuality and thwart the laudable ambitions of any particular branch of the race. Senti-

ment is stronger than any commercial or political tie, and it lives and thrives on justice and equality.

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MORE LIGHT.

THE *Standard of Empire* is one of the most welcome guests on our exchange table, as it brings much information from distant parts of the Empire of real value and interest. We have sometimes wondered, however, if Victoria or some other city could not produce a correspondent who could give that excellent journal more reliable and comprehensive information about the Province of British Columbia than appears from time to time from the pen of the present incumbent of that office. In the issue of December 2, 1910, under the caption of "The Vancouver Show," the following exhaustive (?) report appears:

"The feature of the month so far has been the great National Apple Show at Vancouver. The verdict of visitors was that it was by far the greatest apple show ever held anywhere. In the magnitude of the exhibit, the quality of the fruit and the breadth of the area represented it was a marvellous object-lesson. Every settled area in the province was represented, excepting Alton, in the far Northwest, and the country along the route of the Grand Trunk Pacific, where the settlements are too new to permit of even a beginning in fruit-growing."

In the first place, this was not "The Vancouver Show," but the First Canadian National Apple Show, which, thanks to the enterprise and courage of the Vancouver people, was held in that city. Not only was "every settled area in the Province" of British Columbia represented, but of the whole Dominion of Canada and several of the neighboring States and Tasmania, and apple buyers and newspaper representatives were in attendance here from London (England) to Sydney (Australia). And although it was the greatest pomological exposition ever put up in any country, the *Standard of Empire's* correspondent did not consider it of sufficient import-

ance to slip across the Gulf of Georgia from Victoria in order to send a comprehensive account to his paper, which would doubtless have been of absorbing interest to every reader throughout the Empire. An event which marks an epoch in the development of a great British Dominion surely should demand more attention from the representative of a great world newspaper.

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KOOTENAY FRUIT-GROWERS' UNION.

THE Kootenay Fruit - growers' Union, Limited, capital stock \$50,000, is now an accomplished fact, being duly incorporated under the Companies Act, 1910. The offices of the company will be in Nelson. The provisional directors are: C. W. Busk, Kootenay; J. E. Annable, Shoreacres; A. D. Emory, Willow Point; J. Hyslop, Nelson; O. B. Appleton, Proctor; G. F. Attree, Queen's Bay; and P. J. Locke, Crawford Bay, all being ranchers of the West Arm and Kootenay River. Mr. Busk is president, Mr. Annable vice-president, and E. K. Beeston secretary. These directors will hold office until the first general meeting of the shareholders, which will be held in the spring of 1911. The first issue of stock amounts to \$10,000, being 1,000 shares of \$10 each. Months of careful work have gone into the groundwork of this union, and it is believed that its constitution and general plan are of the model order.

The union is first of all a commercial organization, and not a co-operative one, and deals with both members and non-members on a commission basis. The co-operative principle comes in, however, after the annual dividend reaches 8 per cent., all profits above that figure being returned to shippers on a pro rata basis.

It is expected that the first warehouse will be built the coming season, at Nelson. The plan is contemplated of building local warehouses at central points throughout the district, each locality being expected to take a certain amount of stock on being allotted a warehouse.

NEW PEST MENACES FRUIT IN CALIFORNIA.

THE state fruit convention which met at Stockton, Cal., recently, came to the unanimous opinion that the fruit industry of California is in imminent danger of destruction, due to the rapidly nearing presence of the Mediterranean fruit fly or *Ceratitis capitata*. Immediate and drastic steps were taken for the protection of the fruit.

A resolution is now in the course of construction with which a special legislative committee will be armed to secure a quarantine law, a remedy endorsed by the convention as the only one which can fight the peril with any degree of assurance.

The subject of the Mediterranean fruit fly was introduced in a sensational address by George Compere, of the State Commission of Horticulture. Mr. Compere declared that the peril was only six days distant from this state. He said the fly was being introduced in the personal baggage of immigrants and in the fruit supply of ships.

In round numbers there were 114,000 fruit trees planted in Klickitat county during 1910, according to A. A. Quarnberg, horticultural inspector in the counties of Clark, Skamania and Klickitat. There were 65,000 apple trees, 11,800 apricots, 11,300 peach, 6,400 pears and 5,300 cherries.

* * *

"VANCOUVER ANNUAL."

Dr. Elliott S. Rowe, the versatile secretary of the Vancouver Information and Tourist Association, has just issued the most concise, comprehensive and artistic publication on Vancouver and its relation to British Columbia ever published.

This handsome book will be mailed to any part of the world free on application to the secretary.

Fruit-packing Schools

MR. W. E. SCOTT, Deputy Minister of Agriculture for British Columbia, has issued the following circular:

"In accordance with the policy of the Department of Agriculture, which is to educate fruit-growers in the production of the highest class of fruit, the fruit branch of the department last winter conducted a series of five packing schools for the teaching of the proper and most up-to-date methods of packing and wrapping fruit. This work proved very popular, and undoubtedly met the needs of the districts in which the packing schools were placed. Fruit-growers of the province will therefore be pleased to learn that this work will be continued and further extended, so as to establish these schools in fruit districts of the province where desired and where a sufficient number of pupils can be secured.

"For this work Mr. Berkley, of Vernon, and Mr. Gibb, of Kelowna, have been secured. Mr. Berkley was in charge of a branch of the Okanagan Fruit Union, and packed the first prize mixed carload at the Canadian National Apple Show at Vancouver, which also won second prize sweepstakes. He conducted four packing schools for the department, and gave extremely good satisfaction. Mr. Gibb, of the Kelowna Farmers' Exchange, has had charge of their fruit packing, and had the distinction of packing the winning sweepstakes car of Jonathans at the Canadian National Apple Show. He also gave excellent satisfaction in packing-school work for the department last winter in the Okanagan. The standing and experience of these men are such as to guarantee the highest class of instruction and the fullest satisfaction in the work they undertake, and the fruit-growers of the province will feel that in securing these men the Department of Agriculture has been fortunate.

"From many districts in the province the demand for packing schools is quite urgent, and it is only by spreading out the money available for the work that even a part of these can be accommodated. The amount of fruit to be packed increases very rapidly each year, and localities now benefit by packing schools where a year or two ago this work was quite unnecessary.

"To bring before the public the method in which this work will be administered this circular has been issued, outlining the terms on which packing schools will be arranged for in any district. This circular will be placed in the hands of a responsible body, to whom the local administration of the packing school, in the way of securing the requisite pupils, fruit, a packing room, etc., will be left. This body will also be required to guarantee a minimum attendance of pupils. This plan has been pronounced very satisfactory by organizations in a number of districts.

"The Department of Agriculture provides the instructor and pays his expenses. The department will bear the cost of packing-paper, fruit, and all other legitimate expenses except that of the packing tables, which will be left at each point after the school is finished.

"The responsible body in each case, whether a municipal body, Farmers' Institute or Fruit-growers' Association, will be required to guarantee a minimum of twelve pupils, but not more than fifteen, at a fee of three dollars (\$3) each, to take twelve lessons of 2½ hours a lesson; in other words, one week. In a limited number of districts a double packing school can be arranged for, in which the minimum guarantee will be twenty-four pupils, but not more than thirty, for the same period. Arrangements can be made for an evening or late afternoon public demonstration on apple packing for the benefit of the district at large.

FRUIT REQUIRED

"About three boxes per pupil is necessary. The hardier varieties, such as Ben Davis and Gano, are preferred. Fruit must be in fairly good condition, but need not be graded. Associations should at once secure the necessary fruit, or if none is now left in the district this should be stated at the time application is made, and the department will look after it.

PACKING TABLES

"Two tables, 16 feet by 4 feet and 3 feet high, with burlap top and rests for boxes, are required for fifteen pupils. These tables cost about \$8.50 each when made up by a carpenter. They are unnecessary where fruit packing associations can provide their tables. In cases where these tables must be provided, please advise the department, and full instructions for construction will be sent.

HALL

"For fifteen pupils a hall at least 30 feet by 15 feet and well lighted is necessary. It must be heated so that fruit will not freeze at night and to prevent chilling of the fingers of the packers.

THE ADVANTAGES OF PACKING SCHOOLS

"1. Practical and thorough instruction in actual commercial packing will be given. Packing schools have proved very successful because each pupil is engaged in actual packing under the personal supervision of an instructor who

knows and can teach commercial packing.

"2. Pupils will have an opportunity to learn the method and equipment used by up-to-date and progressive associations for the most economical picking, grading, packing, wrapping and handling of fruit.

"3. Instruction will be given in the operation of the Fruit Marks Act, in the proper marking of different sizes and grades of fruit.

"4. Incidentally, instruction in exhibition packing will be given.

"5. Packers who are given a score of 75 efficiency in the packing school, and who put up a creditable pack the following year, will be entitled to a diploma certifying the same from the Department of Agriculture.

"6. Fruit-growers in the district may visit the packing school at any time and secure information in this way. The evening demonstration and lecture on commercial fruit packing will also be valuable. It is hoped that the Provincial Horticulturist may be present at some, at least, of these meetings.

"In view of the large demand for packing schools and the fact that work must start early in January, districts which aim to avail themselves of this opportunity should send application as soon as possible to R. M. Winslow, Provincial Horticulturist at Victoria."

Demonstration Orchards

THE Government of British Columbia has decided to establish demonstration orchards at various points throughout the province on the following plan:

AUTHORITY

Plan adopted by Department of Agriculture for the operation of Demonstration Orchards. (The object of this work being to demonstrate the results to be obtained by pursuit of the proper methods of culture over the first five years of cultivation with orch-

ards of good commercial varieties in good locations and on suitable soils.)

TERMS OF AGREEMENT

Orchard shall be of five (5) acres more or less.

The land must be cleared and, if necessary, cropped to clover or other soil improver at the owner's expense.

If irrigation is deemed advisable the water must be laid on to the highest point, and distributed by such permanent works as are necessary for application to tree rows. The maintenance charges of irrigation system to be borne

by the owner. Owner to fence where necessary.

The government will bear the cost of plowing and preparing land for planting, will bear the cost of marking out the land and planting the trees; also will choose the varieties best suited, will have nursery stock selected by representatives, and furnish stock free, f.o.b. at point of destination.

During each year of operation the government of British Columbia will reimburse the owner for any expenditure incurred by operations in excess of those considered necessary for the proper care of the orchard. This amount shall be agreed on individually in each case.

The government, through the horticultural branch of the Department of Agriculture, will undertake to give full instruction and demonstration each year to the owner in all matters pertaining to the development of the orchard.

The owner will bear all costs of apparatus for spraying, cultivation, etc., of the orchard, and will perform all operations necessary to the best development of the orchard.

The owner agrees to keep accurate records of costs, etc., and report to the department on record blanks provided for same.

Owner agrees to follow implicitly the instructions of the representative of the department.

The orchard will be available for public demonstrations at the times of the principal cultural operations. The owner will not be in any way bound to escort visitors over the orchard.

In any case when damage to orchard follows from pursuance of instructions, the government will make good the loss.

The agreement to be binding for five (5) years; after that time to terminate on six months' notice by either party. All produce to be for the benefit of the party of the second part. On the expiry of the agreement the trees to become the property of the same.

The agreement may be terminated at any time under the period agreed on, but in such case the owner shall reimburse the government for actual expenditures on the same for trees and cultural operations as shown by vouchers.

American Association of Farmers' Institute Workers

THE fifteenth annual meeting of the American Association of Farmers' Institute Workers was held in Washington, D. C., November 14 to 16, 1910. The delegates registered represented 37 States, the district of Columbia, and three of the provinces of Canada. Reports presented from 32 states and territories of the United States and from five of the Canadian provinces give the total number of sessions of regular institutes held during the year ended June 30, 1910, as 20,956, with an attendance of 2,296,517.

The President, in his annual address, summarized the work of the Farmers' Institutes as having three general purposes: (1) Increasing production; (2) securing better home and community life in the rural districts; and (3) a

lessening of the all-too-wide margin that now exists between the prices received by the producer and those paid by the consumer. He stated that the farmer's share of the consumer's dollar was about thirty-five cents, consequently the increased cost of living is not due to the high prices paid the farmer; that the remedy is to bring the producer and the consumer near enough together to shake hands. As a means to this, organization and co-operation were emphasized.

The programme continued through two days. It was made up of general sessions, a women's session, and a session for the consideration of institutes for young people. Secretary Wilson, Assistant Secretary Hays, and Dr. A. C. True, of the National Department of

Agriculture, delivered addresses, as did also Hon. C. C. Jaines, Deputy Minister of Agriculture for Ontario, and Dr. G. C. Creelman, president of the Ontario Agricultural College at Guelph.

The following recommendations reported by the committee on resolutions were adopted by the association:

1. We recommend that the several directors of Farmers' Institutes, members of this association, make the experiment within the next year of holding some institutes for young men between the ages of fourteen and eighteen, and also institutes for young women between the same ages, and that those so doing be requested to report success or failure at once to our institute specialist, Professor John Hamilton.

2. We heartily endorse the idea of employing experts by the year to give personal instruction and demonstrations, organize farm clubs, etc.

3. We recommend that greater consideration be given in our institutes to subjects relating to home life, either by special women's meetings or in the general sessions. That we especially commend the excellent papers and discussions by the ladies on the subject of women's institutes.

4. We beg to submit to the consideration of the Honorable the Secretary of Agriculture the very great importance of a large appropriation for the Farmers' Institute work in the Department of Agriculture. In our opinion, a sum of not less than \$50,000 could be used annually to the great advantage of this work.

5. We desire to recommend the enact-

ment of legislation whereby the Federal Government shall appropriate for each state and province for agricultural extension work a sum equal to that appropriated for experiment and research.

6. We recommend that Congress be memorialized to grant the franking privilege for all agricultural extension mailing.

7. We recommend that legislation be enacted whereby the Federal Government aid in the building of public roads.

8. We beg to submit to the consideration of the Director of Experiment Stations the desirability of offering in the Annual Graduate School a course of instruction in institute and other forms of extension work.

The following resolution was also reported and adopted:

"In view of the reported condition of the colored farmer of the South and his relation to Farmers' Institute work, be it resolved, That at the next annual meeting a report or paper be presented to this association regarding their progress, not only in Farmers' Institute work, but relating to their general agricultural advancement."

The officers of the association for the next year are: A. M. Soule, Athens, Georgia, president; W. T. Clarke, Berkeley, California, vice-president; John Hamilton, Department of Agriculture, Washington, D. C., secretary-treasurer. The members of the executive committee are: Mr. Val Keyser, Lincoln, Nebraska; Hon. Franklin Dye, Trenton, New Jersey; Prof. J. H. Miller, Manhattan, Kansas.

The Apple Show at Chicago

AUGUST WOLF, Spokane's active publicity man, writes *The Fruit Magazine* as follows:

"Perhaps the most significant result of exhibiting a portion of Spokane's National Apple Show in Chicago, recently, is the widespread attention attracted thereby to the commercial orchard districts of Washington, Oregon, Idaho, Montana and British Columbia," said

E. F. Cartier Van Dissel, first vice-president and chairman of the board of trustees of the Spokane National Apple Show, adding:

"The daily newspapers and class publications in Chicago were liberal in devoting space to the enterprise, and taken in all it was the best exploitation the apple ever had (of course Mr. Van Dissel did not see the First Canadian

National Apple Show held in Vancouver, B. C.). Moreover, the people of the Mississippi Valley country and the states to the east and south and north have a better acquaintance today with the apple districts in the Northwest than ever before."

Mr. Van Dissel said that the Chicago Show was attended mostly by men and women who have money to invest or are looking for homes in this country. The fact that the exhibitors were literally besieged from morning until night by eager inquirers, seeking knowledge at first hand of the various districts in the four states and province, he added, may be taken as an indication that many will cast their lot in the western country.

"The carlot displays," Mr. Van Dissel continued, "were viewed by thousands, who marvelled at the color, size and uniformity of the western apples, and also held the interest of buyers from all over America; but it is probable that the district exhibits were the chief centres of attraction for those with a few thousand dollars to invest in orchard lands.

"Representatives of the districts that entered displays were on the ground with photographs, statistics and conservative word pictures of the exact state of things in the pomological history of the valleys and bench lands in Washington, Oregon, Idaho, Montana and British Columbia. They told their stories in a convincing way and were ready to answer all questions as to climate and soils.

"Tremendous interest was aroused in all the districts. There was a general interchange of courtesies; it was a genuine 'get-together' movement, and as a result all will benefit.

"No one is in position to foretell the extent of the influx of capital and settlers into the Northwestern country as a direct result of the apple show, but if only one of every hundred men and women, who evinced interest in what this country offers to the homeseeker, crosses to the west side of the Rocky Mountains the value of the Chicago exposition will be apparent on all sides.

"Some might infer that this widespread talk about apples and apple lands is en-

tirely due to the Spokane and Chicago shows. That is not true; it is too general to make such claims. However, they confirmed the reports given in print and by word of mouth of the marvellous development of the apple industry and the rapid and substantial strides made in the Northwest during the last ten years, and as such they proved their value a thousand-fold.

"The Chicago show was operated at a financial loss to the management, as we expected it would be, but from a publicity view point it was a highly gratifying success. It also resulted in bringing invitations from many eastern and middle western cities to have the shows there following the competitive exposition in 1911.

"It is likely that the coming year will see the construction of a permanent home for the National Apple Show in Spokane, also the establishment of a circuit in important eastern cities. We are highly pleased with what was accomplished, and I look for a larger and more complete show than ever for the fall of 1911."

TOMMY'S ESSAY ON HENS.

TOMMY TOOTHPICK is an amusing little chap who attends school. The other day the teacher asked the class to write an essay on hens, and this is what Tommy handed in:

"Hens is curious animals. They don't have no nose, nor no teeth, nor no ears.

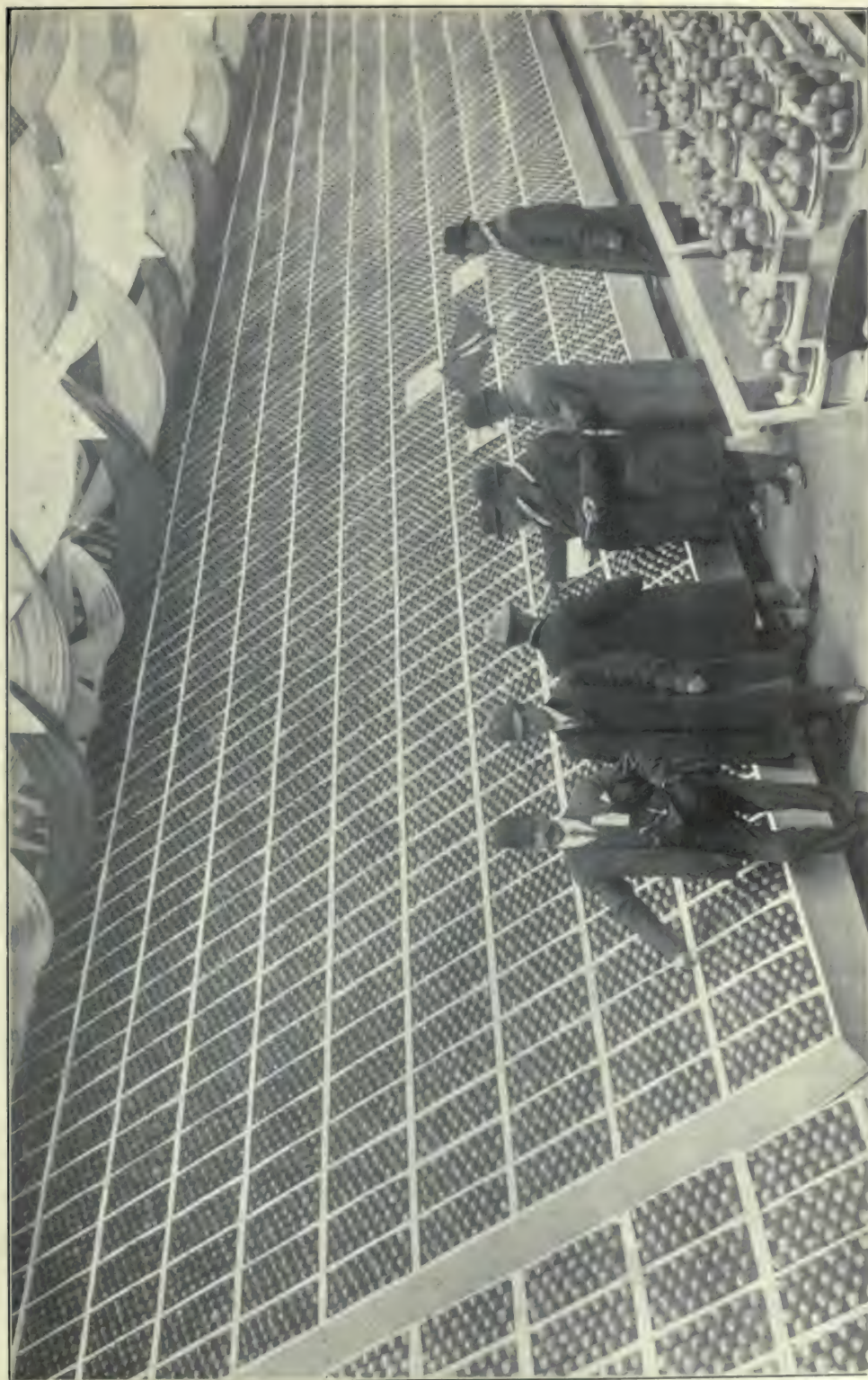
"The outside of hens is generally put into pillers and feathered dusters. The inside of a hen is sometimes filled up with marbles and shirt buttons and sich.

"Hens is very useful to lay eggs for plum pudding. I like plum pudding.

"Hens has got wings, and can fly when they are scart. I cut my Uncle William's hen neck off with a hatchet and it scart her to death.

"Hens sometimes make very fine spring chickens.

"Hens' eggs are sometimes called hen fruit, but it ain't real fruit like what grows on trees."



KELOWNA, B. C., BOARD OF TRADE SWEEPSTAKES CAR—MOST PERFECT CAR OF APPLES EVER EXHIBITED. THE GENTLEMEN IN THE PHOTO, FROM LEFT TO RIGHT, ARE: J. GIBB, EXPERT PACKER; B. McDONALD, WHO HAD CHARGE OF THE CAR FOR THE BOARD OF TRADE; MESSRS. SEARS, VAN DENAN, BURRELL AND NEWELL, JUDGES, AND MAXWELL SMITH, MANAGER FIRST CANADIAN NATIONAL APPLE SHOW.

Our Ottawa Letter

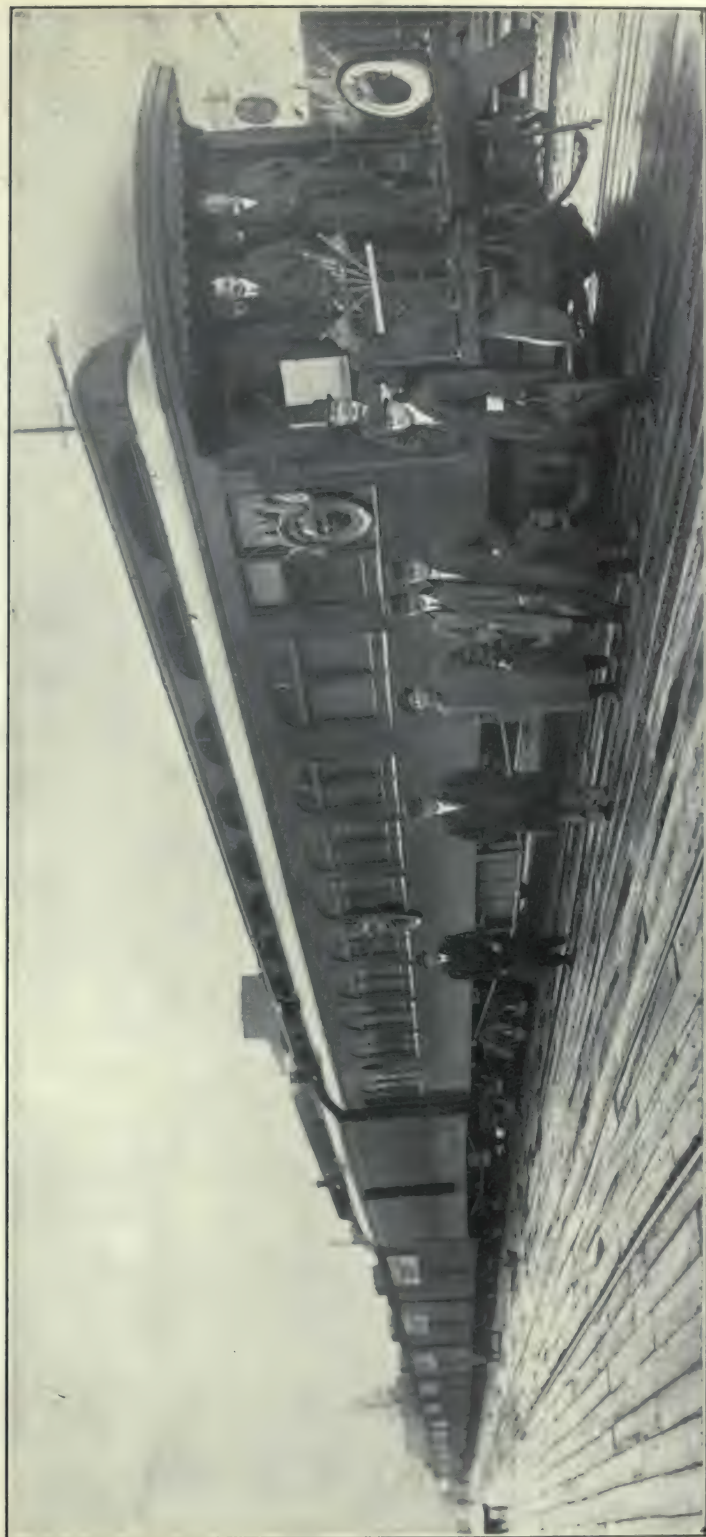
FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

ANDREW CARNEGIE has been in the habit for some years of sending Christmas gifts, in the shape of barrels of apples, to friends in Great Britain. It seems that during a visit to the capital of the Dominion in connection with the formal opening of the Carnegie Library the Pittsburg ironmaster, for the first time in his life, tasted the real Northern Spy variety of Canadian apple. He realized promptly that he had never before enjoyed an apple quite so much to his taste, and before he left Ottawa gave an order for twenty-five barrels of the best quality of selected Spies to be shipped to a list of names and addresses in the Mother-country. He has repeated the order each winter since for shipments through the Canadian Express Company, timed to reach the recipients a few days before Christmas. This season's consignment left Ottawa on Thursday, December 8.

A notable address on the Act governing fruit marking was given by Mr. Alexander McNeill, chief of the fruit division of the Department of Agriculture, at a recent meeting of the Retail Grocery Association of Ottawa. He showed that the Act had been fairly well observed with respect to the export trade, one result of which was that Canadian apples in England, bought and sold wholly on the markings, have brought a shilling more per barrel average than consignments from the United States. In the domestic trade, Mr. McNeill said, a closer inspection was found to be necessary, involving the appointment of additional inspectors. Over 200 prosecutions were conducted during the year by the fruit division against packers for not living up to the Act, and the situation calls for and is susceptible of great improvement. Mr. McNeill advised closer co-operation between fruit-growers and the merchants, particularly in the grape industry, which was cited as an example of the almost inevitable loss

sustained in any branch of production and trade, where the representatives of such interests fail to co-operate, not for the welfare of both alone, but of the consuming public as well. Mr. McNeill expressed the opinion that the trade might be pushed a great deal more than it was by the merchants if they cared to make it an object and were willing to cut their profits in two and try to sell twice the quantity. Mr. McNeill pointed out the immense advantage to trade and industry and to the people of the country at large of lower prices and wider distribution and sales. The grape growers of Canada, he said, could afford to sell at present prices if there were correspondingly increased sales, but not otherwise. It is to be hoped Mr. McNeill's counsel will be like the seed that fell into fertile ground, and that it will lead to active steps in the direction recommended. Anything that would double the sale of Canada's fruit products, necessitating the employment of two hands where one is now on the payroll, without at the same time cutting down profits too severely, would be a boon to the country.

In the course of the evening some of the leading members of the association cited various instances of dishonest marking of barrels of apples bought by them of shippers, agents and others. It was stated that dishonest marking had become very widespread, and that the losses caused thereby to the trade were heavier than could be supposed by outsiders. It was now quite a common thing, and no longer the exception, for a dealer opening for inspection barrels bought as No. 1, and sold to customers as No. 1, to find the contents barely a passable No. 2, and so on. One grower stated that on opening a barrel marked No. 1 he discovered that the trade-mark "No. 1" had been freshly painted over "No. 2" or "No. 3," as the case might be. The paint was so fresh that it rubbed



THE SPECIAL TRAIN THAT CARRIED THE ELEVEN CARS OF EXHIBITION APPLES FROM SPOKANE TO CHICAGO, AFTER THE THIRD NATIONAL APPLE SHOW AT SPOKANE.

off and therefore could not possibly have been put on the barrel when packed. The contents of the barrel consisted largely of inferior fruit which would not pass any inspector as No. 2. Other speakers referred to the very high prices exacted for fruit marked No. 1 this season, and it was intimated that the association would take active and energetic measures immediately to protect themselves and the consumer, if they could, from the flagrant frauds with which the public have become so familiar of late in regard to the contents of the expensive and deceptive apple barrel of the day.

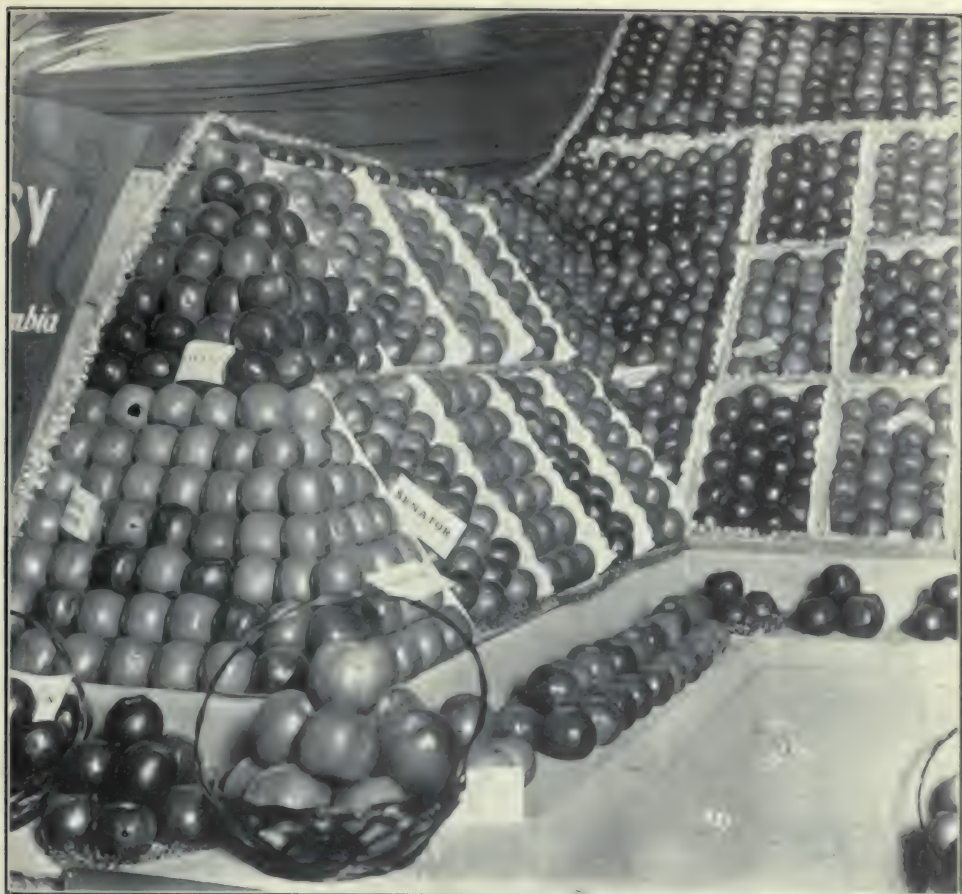
A display of prize apples from the Canadian National Apple Exhibition, consisting of some 800 specimens belonging to 45 separate varieties, is being shown in one of the large Russel House offices fronting on Sparks street by the Central Okanagan Lands Company, Limited. The display is attracting a great deal of attention, and has excited no little surprise, comparatively few persons here—outside of practical fruit-growers and dealers—having had the remotest idea that fruit so exceptionally fine in appearance, and with all the best characteristics of an apple, could be produced in Canada. The whole of the land the company is now offering seems in consequence to be going fast, and present indications point to the capital and the Ottawa valley being represented very soon in the Okanagan region by a colony of fruit-growers whose training and tastes peculiarly fit them for the conditions that prevail in the district of which Kelowna is the growing and prosperous centre.

Mr. J. A. Ruddick, Dominion Dairy and Cold Storage Commissioner, in the last monthly report of his branch, published in the "Statistics Monthly" of the Agricultural Department, deals with the First Canadian National Apple Show, at Vancouver. He says it "will pass into horticultural history as an achievement of which the management, the city of Vancouver, and the Province of British Columbia have every reason to be proud." It proved a "notable event in

the history of apple growing in Canada." The impressive character of the display is shown by an enumeration of the entries, reaching a total including twelve carload lots, of something like 12,000 boxes of apples, as well as apple by-products; and Mr. Ruddick continues: "This branch arranged, by authority of the Minister, for a collective exhibit of leading varieties of apples from all the fruit-growing provinces, together with a display of promising seedlings which have been originated at the Central Experimental Farm, Ottawa, and which were forwarded by Mr. W. T. Macoun, Dominion Horticulturist. The Quebec Pomological Society sent a small exhibit of Fameuse, two exhibits from Nova Scotia, and there were ten boxes of Tasmanian apples on view. The promoters cannot be accused of having neglected any opportunity of trying to induce Eastern growers to take part in the competitions. The average British Columbian has reasons, and good ones too, for spending his time and money in advertising the fruit-growing possibilities of his province.

"Although probably one-third of the carload exhibits was from the States of Washington and Oregon, the honors of the show went to British Columbia. The Kelowna Board of Trade carried off the big sweepstakes with a straight car of Jonathans, consisting of 720 boxes, each box containing exactly 120 apples. The packing of this carload was considered to be perfect. The whole collection of apples was most artistically arranged in two large adjoining buildings, one of which was erected specially for the occasion."

Full accounts of the sale of peaches shipped to Great Britain by the cold storage branch of the Department of Agriculture have been received. Averaging all the shipments to different markets, the price sold for in Great Britain was \$1.04 per case of 20 to 23 peaches. The inland and ocean freight charge was 13.6 cents per case, and selling charges in Great Britain, including commission, was 9.7 cents per case, leaving a net price of 80.7 cents per case f.o.b. at St.



A DISTRICT DISPLAY, THIRD NATIONAL APPLE SHOW, SPOKANE.

Catharines. This is equal to 13 cents per pound for the peaches f.o.b. point of shipment.

Mr. W. A. MacKinnon, Canada's Trade Commissioner at Birmingham, England, sums up the results of the season's receipts of Canadian peaches in his last report to the Department of Trade and Commerce. He says: "It is an unmixed pleasure to report on the very satisfactory results obtained in this country with Canadian Alberta—(Editor: Query Elberta)—peaches. Apparently there has not been a single faulty case among the shipments to various parts, a performance which reflects the very greatest credit upon the shippers (mainly at St. Catharines) and upon the Department of Agriculture, which had the experiment in hand. Birmingham received its consignments through Lon-

don, a large firm in the market here having disposed of some 20 cases in small lots of about five at a time. Each case contained from 20 to 24 peaches, which sold at from 5s (\$1.21) to 9s (\$2.19) per case. The condition, both as to firmness and maturity, was perfect, and the packing could not possibly be improved upon. Not a single peach was decayed when first opened, nor was any complaint made during the progress of disposal at retail stores. It would be most unwise to anticipate the maintenance of such high prices if this trade were expanded by large shipments in future years, but it may be safely said that in similar conditions Birmingham alone could easily dispose of 100 to 200 cases in the season. If, however, large quantities were sent, as from South Africa, the price would probably drop to some-

thing like an average of 4s. There is every reason for supposing that such a price would provide ample compensation for the Canadian grower."

Referring to apples, Mr. MacKinnon reported that receipts of Canadian, Maine and Virginian apples continued rather heavy, being almost equal to the arrivals for the same period last year. Nevertheless, the prices for first quality ruled high. Ribston Pippins were selling to the retail trade at about 20s (\$4.86), while best York Imperial ran 4s (97 cents) to 6s (\$1.46) higher, the Al-bemarle Pippin bringing 28s (\$6.80) to 30s (\$7.29). These figures are, of course, for good stock, but as they preclude profitable retail selling at 2d a pound, the demand by consumers is restricted. It has frequently been pointed out that when prices are high the demand for apples falls off, oranges to some extent taking their place. The latter are just now selling at 10s (\$2.43) for 200, which works out at just under 1¼ cents each, so that even the retail price is less than is asked for fancy apples. As oranges will go still lower, it is apparent that only a limited quantity of apples can be sold at high prices, even when supplies begin to fall off. That *poor* fruit will not sell in seasons of scarcity is evident by the following figures from a recent Liverpool sale:

- 11 barrels, various sorts, at 9s (\$2.19).
- 11 barrels, various sorts at 9s 3d (\$2.25).
- 21 barrels, Baldwin, Snow, Phoenix and Canada Red, at 7s 9d (\$1.88).
- 5 barrels Spy, at 3s 6d (85 cents).
- 7 barrels, various sorts, at 3s 6d (85 cents).

The highest price obtained for any lot of the consignment in question was 14s (\$3.40).

From Liverpool comes the following from Mr. P. B. MacNamara, Canadian Trade Commissioner at that port, with respect to apples: "Arrivals are again on a comparatively large scale. Receipts are mostly from Maine, Boston and Virginia, with a rather increased quantity from Canada, which generally were not

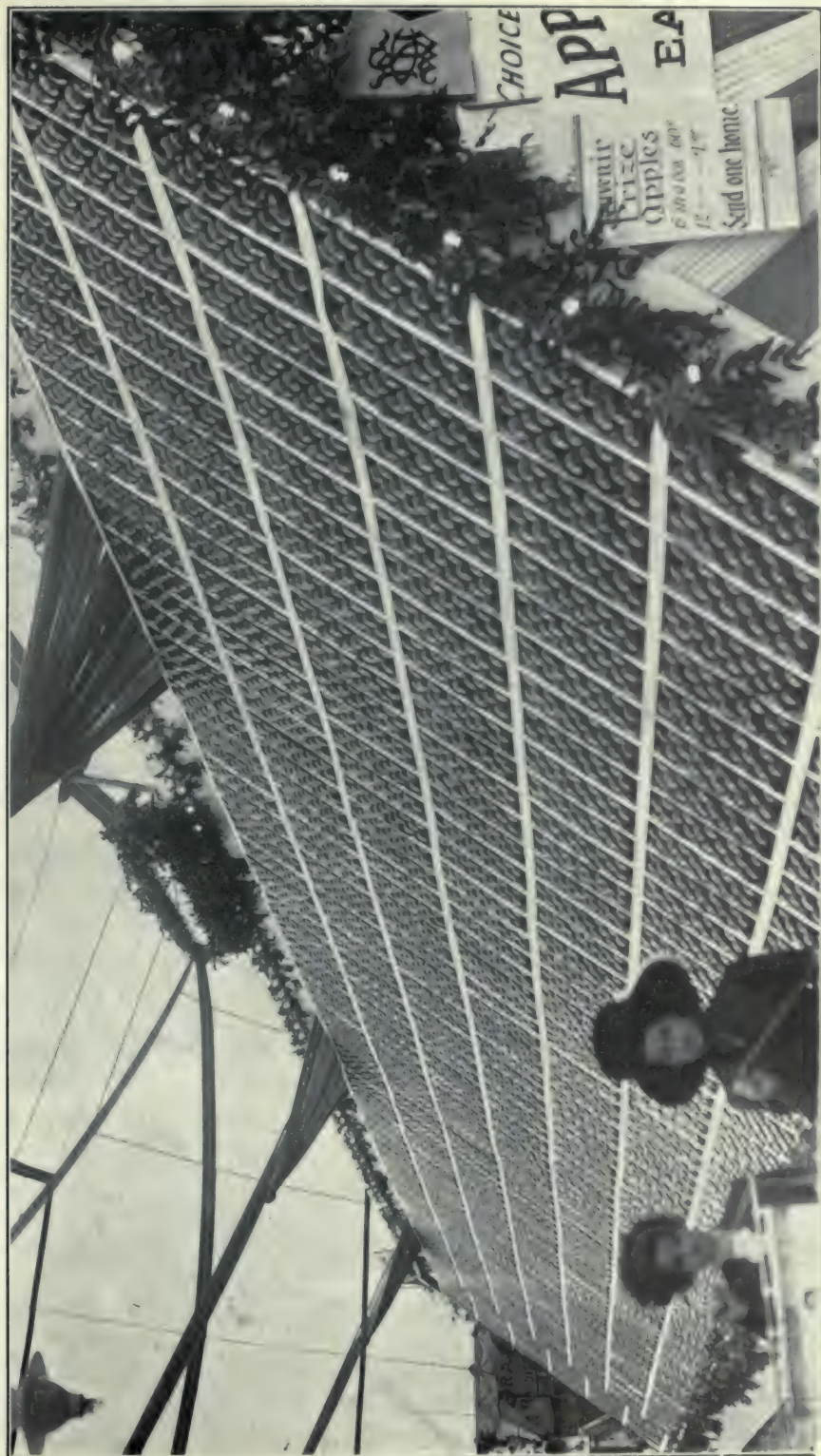
attractive, a large proportion being a second and third selection, which sold at a low range of prices. Virginians are showing signs of being over-ripe, and are scarcely arriving in the past usual good condition. Boston and Maine continue to show the same wide variety in quality, with a corresponding range of prices. The demand continues active, with prices for good stock about unchanged, and a slight decline on anything inferior. Canadian apple prices were as follows:

	Firsts				Seconds and Slacks			
	s	d	s	d	s	d	s	d
Baldwins -	18	0 to 19	3		14	0 to 16	0	
Spy -	20	0 to 21	0		15	6 to 17	0	
Davis -	15	6 to 16	3		12	6 to 13	6	
Russets -	22	0 to 24	0		19	0 to 19	6	
Greenings -	22	0 to 23	0		19	9 to 21	0	
Kings -	21	0 to 24	6					
Blenheims -	20	0 to 22	6					
Starks -	18	0 to 19	0					

A very large decrease in the importation of apples for the Glasgow market, due to the shortage in the Canadian crop, is noticed by Mr. J. T. Lithgow, Canadian Trade Commissioner for Glasgow, in his last report to the Department of Trade and Commerce. I quote: "The prices realized have been very satisfactory for both apples and pears, and there should be an increased market for the latter fruit next season if care is taken with the pack. The canned apples are well thought of, and command good prices."

Bristol reports from Mr. F. D. Arnaud, Canadian Trade Commissioner at that growing distributing centre, state that a recent consignment of 250 barrels of Canadian apples sent to Avonmouth and sold obtained the following prices:

- Baldwins, No. 1, per barrel 24s.
- Kings, No. 1, per barrel 24s.
- Golden Russet, No. 1, per barrel 23s.
- Greening, No. 1, per barrel 22s.
- Mann, No. 1, per barrel 20s.
- Newton Pippins, No. 1, per barrel 20s.
- Winter Pippins, No. 1, per barrel 21s.
- B. Pippins, No. 1, per barrel 22s.
- Cranberry Pippins, No. 1, per barrel 23s.
- Stark, No. 1, per barrel 21s.
- Golden Russets, No. 2, 19s 6d.
- Kings, No. 2, per barrel 22s.



HOOD RIVER, OREGON. SWEEPSTAKES CAR AT THE THIRD NATIONAL APPLE SHOW, SPOKANE

Present prices on the local market were quoted as follows:

Baldwins, No. 1, per barrel 21s 3d.
 Starks, No. 1, per barrel 23s.
 Starks, No. 2, per barrel 19s 9d.
 Canada Reds, No. 1, per barrel 23s.
 Canada Reds, No. 2, per barrel 19s 9d.
 Russets, No. 1, per barrel 24s.
 Russets, No. 2, per barrel 21s.
 Red Seeks, No. 1, per barrel 22s.
 Red Seeks, No. 2, per barrel 19s 3d.
 Ben Davis, No. 1, per barrel 19s 6d.
 Ben Davis, No. 2, per barrel 17s.
 Talman Sweet, No. 1, per barrel 18s 6d.
 Talman Sweet, No. 2, per barrel 16s 6d.
 Blenheims, No. 1, per barrel 23s.

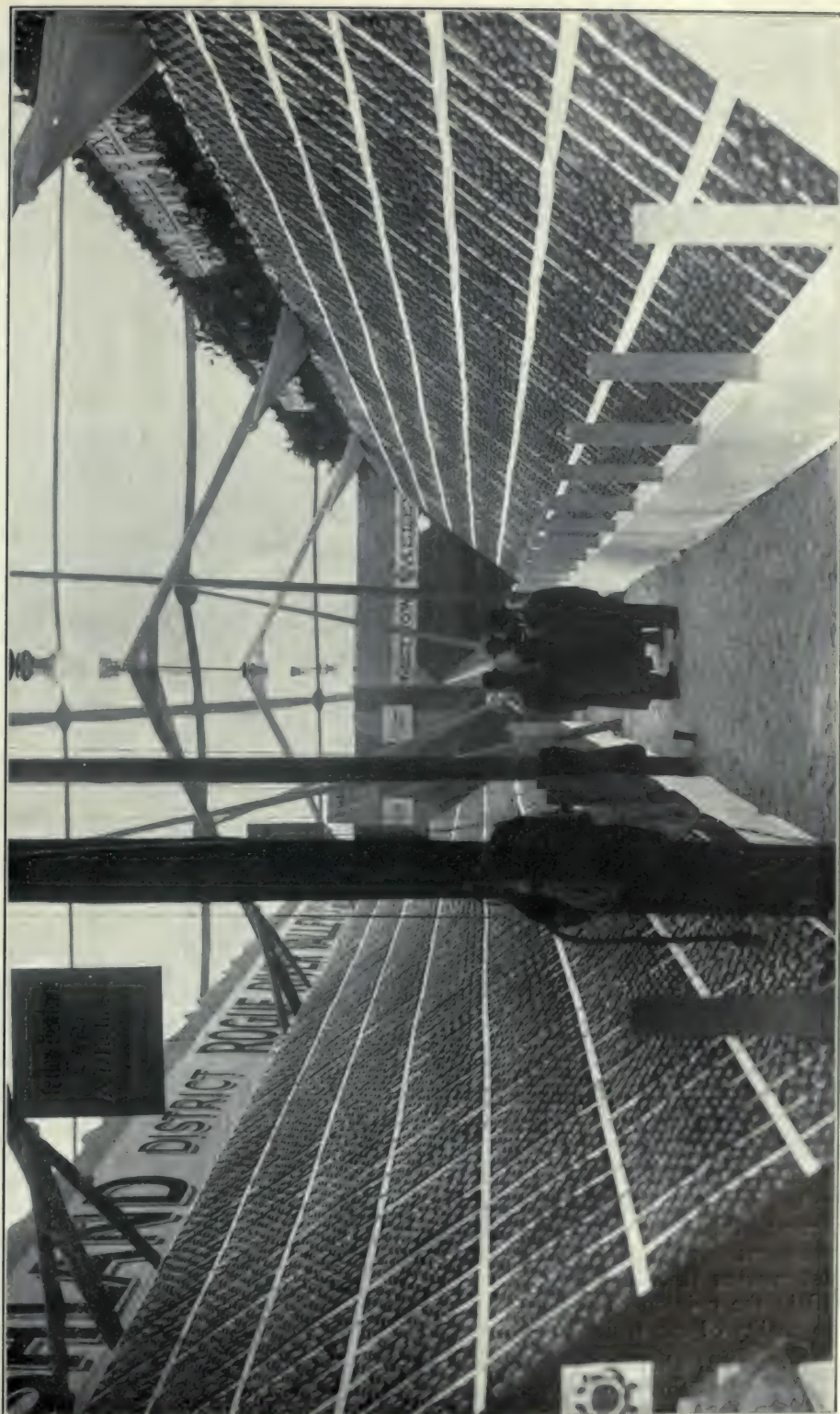
It will interest Canadian exporters of honey to learn that a new trade in this article of food is now being developed between South Australia and Bristol, a shipment of 39 cases, containing between two and three tons, having just been received at Avonmouth from Adelaide. Strict precautions are taken by the South Australian government to ensure the purity of the honey. Before it is allowed to be exported an analysis is made by special officials. The quality is to be guaranteed when offered for sale. The honey is brought over in 60-pound tins and is then in a solid state. After being subjected for four or five hours to a steam heat of 120 degrees it is placed, while in a liquid state, in screw-top jars ready for the retailer.

It is expected that if this branch proves a success it will do much to encourage increased importations at Avonmouth of apples, frozen meats and other provisions, as the distributing point for a district within a radius of 100 miles, containing a population of about 10,000,000.

Mr. Arnaud reports that the Somerset Agricultural Instruction Committee, in conjunction with the National Fruit and Cider Institute, has resolved to give instruction in cider-making for farmers and fruit-growers on their own farms. The Cider Institute will place at the disposal of the Agricultural Instruction Committee the service of its cider maker, who will be available on three days a

week. Each farm will be visited by the instructor no fewer than three times during the season, so that the making of the cider from start to finish may be dealt with. The instruction given will be of a purely practical character. I find from the "Western Daily Press," Bristol, Eng., that the N. F. C. I. has for the last seven years been engaged in research and investigation in matters connected, not only with the cider industry but in the discovery and culture of yeasts and similar subjects. The cultivation of cider apples and perry pears for the foundation of orchards throughout the West and also in other parts of England is a subject to which the managing committee have devoted very great attention, and in their public-spirited action the committee are supported not only by the body of governors, but also by the Board of Agriculture and Fisheries and the Bath and West of England Society, who both assist the institute in this matter so that the institute may become of real practical value to everyone who either owns or rents the smallest piece of land upon which fruit can be grown. The gathering at which the resolution referred to was adopted included members, associates and visitors for the counties of Worcester, Hereford, Monmouth, Gloucester, Somerset and Devon.

The development of the fruit district on Lake Huron is attracting considerable attention. The last issue of the "Statistics Monthly" of the Department of Agriculture says the sandy shore of Lake Huron, extending from Sarnis to Goderich, is becoming one of our best districts for peaches, plums and small fruits, as well as for apples. For one or two miles back from the lake, peach trees thrive as well as in the Niagara district, and large quantities of fruit are now being shipped every year by steamers to Fort William and Port Arthur, and thence distributed to supply the markets of the Northwest. Apple orchards have a much more extensive area in Lambton county, and their products are commanding a superior place in the regions to which they are sent. The territory



TWO GOOD CAR EXHIBITS, THIRD NATIONAL APPLE SHOW, SPOKANE.

already occupied with orchard and small fruits, or suitable for occupation, has an extent of nearly fifty square miles and is very similar to the fruit-growing district along the east shore of Lake Michigan, in the State of Michigan, from the Indiana State line to Point Sable. A smaller area in Ontario lies along the south shore of Georgian Bay from Owen Sound to Collingwood. But Ontario's most famous districts for peaches and small fruits are still on the north shore of Lake Erie, in the counties of Essex and Kent, and on the south shore of

Lake Ontario from Hamilton to the Niagara River.

According to Mr. Sampson Morgan, of Sevenoaks, England, in the "Western Daily Press," Bristol, Eng., apples sufficient for the home can be had in the Mother-country "for every twelve months of the year." The supply may be secured, Mr. Morgan says, "from twelve trees of eight successional varieties, in a space of ground 144 feet square," as well as "quantities of bush fruit between the trees."

Report of B. C. Market Commissioner

J. C. Metcalfe's Report to the Minister
of Agriculture for the Season of 1910

THE market has extended even more rapidly than was anticipated from the conditions known to exist last year, and although our crop was more than treble that of last year, there has not been the slightest difficulty in disposing of it at prices profitable to the growers. Had our crop been double what it was, it could still have been disposed of. The fruit crop in Eastern Canada was very short this season, and this eliminated competition from this source almost entirely outside of Winnipeg. Apples and grapes from Ontario are coming freely at the date of this report, but the supply cannot be kept up, as stocks in Eastern Canada are already seriously depleted.

The opinion of jobbers this season has been expressed mainly by deeds, as they have been extensive buyers of British Columbia fruits of all kinds. Indeed, where last year they were almost wholly indifferent, this year they were very keen to get our fruit, and to pay the highest market prices. Retailers concurred in the opinion of the jobbers as to the quality of our fruit.

The question of whether our small fruits shall be handled through the jobbers or through the retailers is one that will have to be dealt with immediately. Small

fruits will have to be handled through one or the other exclusively, as otherwise our fruit would come in competition with itself. If handled through jobbers, the jobbers would of necessity have to furnish the machinery for distribution and thus avoid all possibility of any market becoming glutted. If supplied on order to the retailers, it will be necessary for the fruit organizations of British Columbia to send out their own travellers and solicit the orders.

British Columbia cherries did better this year than last owing to the unusual dryness of the season, but plums did not hold up well from the Lower Mainland when shipped by freight. All our large fruits grown in the different sections of the upper parts of the province, apples, pears and crab apples from the Lower Mainland and Vancouver Island are all very acceptable to the fruit trade of the different provinces, but particularly in the province of Alberta, where, up to the present time, the greater part of our output has been marketed. So marked is this preference that they will pay more for our fruit than for either American or Ontario fruit. To this, however, there are exceptions—namely, the plums, prunes, peaches and cherries from the Lower Mainland, and plums,



INTERIOR VIEW OF OKANAGAN APPLE EXHIBIT AT T. EATON'S STORE, WINNIPEG

prunes and peaches from Vancouver Island and Islands.

The planting of these fruits should be discouraged by the department in future, and the planting of small fruits encouraged; also such large fruits as apples, crab apples and pears, for which these districts are well adapted. The reason for this is obvious. Our climatic conditions on the Lower Mainland and Islands, through the humidity of the atmosphere, favor the growth of fungus diseases, and more particularly what is called "brown rot," in plums, prunes, peaches and cherries; this renders them unfit for long transportation, as they altogether lack the holding-up qualities so essential to successful fruit-shipping, especially where we have to come in competition with fruits from the upper part of the province and from the American side. I found the prejudice general on the part of jobbers, retailers and consumers against fruits from these particular districts. The varieties most appreciated are:—

Apples—Yellow Transparent and

Duchess for early; Gravenstein and Wealthy for fall; King, McIntosh Red, Northern Spy and Jonathan for winter.

Pears—Bartletts, Beurre Clairgeau and Beurre d'Anjou.

Cherries—Almost any variety of good size that will ship and arrive in good condition, and the same applies to the different varieties of small fruits.

Peaches—The best varieties are Free-stones (yellow flesh), Elbertas and Crawford.

With respect to holdings already planted with plums, prunes and peaches on Vancouver Island, and plums, prunes, peaches and cherries on the Lower Mainland, the only solution is the local market and the cannery.

All that was said last year as to the need of increasing supplies may be said with equal truth this year. The proof of this is that much of the success of the season just closing was due to our being able to supply fruits of one variety in larger quantities than was possible last year. Fewer varieties and

larger quantities of those grown must be the motto of British Columbia fruit-growers for many years to come, always bearing in mind the varieties suited to the different districts and the markets to be supplied.

Competition from the American side and Ontario will be just as keen as ever, but the past season has given British Columbia a grip on the trade which she did not have before, as the persistent advertising of our fruit is beginning to bring results, and wherever our fruit was given a fair trial it made good. The largeness of our crop this season was a factor also in making jobbers more willing to trade with us than formerly.

While, as stated in my report last year, the fruit-houses of the prairie provinces are largely controlled by American capital, the claim which they made last year, that they were free to buy the best fruit in the cheapest market, has been made good in a great measure, as many of them have this season bought more than the independent houses.

The list of these remains much the same as last year; the auction mart in Winnipeg is still carried on. These houses claim a shortage of supply of standard varieties on the part of British Columbia growers, and that they are prepared to buy larger quantities as we produce them, and meet the American competition in the matter of prices.

Jobbers state, with reference to our prices, that while they are willing to pay more for our fruit than they pay for American fruit, they are not willing to pay the extreme difference asked by British Columbia growers. Prices, on the whole, have been well maintained for all fruits, with the possible exception of peaches near the close of the season. Prices on this fruit dropped to a point where the profit to the grower was very narrow after all expenses were paid. This difficulty might in future be overcome by more careful attention to distribution.

In regard to the handling of our fruits, one of the three methods outlined in my final report last year is

necessary, and I am of the opinion that the marketing through the present jobbing-houses will be the most satisfactory to our growers and shippers at the present time at least. Either of the other methods would entail very great expense in getting under way, because if not handled through present jobbing-houses these houses would come in active competition with our own, and price-cutting would be the natural result. The present jobbing-houses now realize the great possibilities of fruit-growing in British Columbia, and have already to some extent fulfilled their promise of last year of coming in and buying our fruit in quantities and paying cash for it, and this method of buying will unquestionably be extended by them next year.

I have to report a very marked improvement in the packing and loading of cars. Many of the jobbers have complimented the British Columbia people on this point particularly, and through the past season there has been no loss on this score. Nothing is so well done, however, that it cannot be done better, and for that reason, and also for the benefit of new growers who have not previously done any packing, the directions of last year are repeated:

1. Place most perishable fruit—pears, for example—nearest the ice-bunkers.
2. Leave plenty of ventilation along bottom of car and between the rows of crates.
3. Leave abundant space for bracing at centre of car, and see that all braces are strongly secured to prevent slewing of crates when cars are shunted.
4. Never fill a car more than two-thirds full, as the natural heat generated by fruit rises, and if there is any bad fruit in a car it is sure to be at the top.

In addition to the above, it is very desirable to have the fruit as cool as possible before it is packed. For example, fruit picked one day should not be packed until the next, and should be kept in well-ventilated houses, where

the cool night air will have free access to it.

There is a very general outcry on the part of jobbers and retailers that express rates are too high, while on the other hand the Express Company claims persistently that it is carrying British Columbia fruit at a loss. The Lower Mainland growers, especially, are clamoring for a lower rate on ton and half-ton lots to enable them to ship their plums and prunes by express. The express service has been greatly improved during the past year at all distributing and transfer points, and any failures in the handling of our fruits have usually been traced to new hands, the regular staff, apparently, endeavoring to improve the service. The point made last year as to uneven platforms has not been disregarded. New platforms have been laid at some of the transfer points, and further improvements of the same kind are promised for the near future. As regards freight rates, some of the irregularities have been adjusted, and

there is hope of others being attended to. Speaking generally, freight rates are fairly satisfactory.

Last year, in summing up my report, I laid emphasis on a few points, and all that was said then can be said this year with increased earnestness. There is one point, however, which I wish to enlarge upon, and that is co-operation. It is only by gathering our fruit-growers into organizations, either large or small, that we can hope to increase the supply of fruit, both large and small; to improve the quality of the fruit by stirring up interest in more thorough cultivation and other methods, such as spraying, pruning, thinning, etc.; growing the varieties of fruit wanted by prairie markets, and in better packing and more care in shipping.

Further, it is only by co-operation that the fruit-growers can control the sale of their fruit and the uniformity of the pack. By co-operation it will be possible to ship in carloads a uniform quality packed in a uniform manner.



INTERIOR VIEW OF OKANAGAN FRUIT SHOW AT T. EATON' STORE, WINNIPEG



THE SHOW WINDOWS OF T. EATON'S, WINNIPEG—DECORATED WITH OKANAGAN APPLES

Too much stress cannot be laid on these things.

Along this line nothing would be more valuable to the fruit-growers than the establishment of Government schools or depots in the fruit-growing districts, where proper methods of packing would be taught at a small cost to the individual. By co-operation also it would be possible to lessen cost of production in securing a supply of labor, the cost of packages, spraying material, and im-

plements used in orchard work; in fact, a dozen ways.

The season just passed has marked progress along many lines for the British Columbia fruit-growers, and the success of the future is largely in their own hands. With a corresponding improvement in each coming year the prophecy of Earl Grey will be fulfilled, that our province will find that she has a greater asset in her orchards than in her mines.

That Boy

Under a spreading apple tree
The boy with bare feet stands;
He has ten apples in him and
Some more are in his hands—
Beneath his waist of calico
His tummy-tum expands.

His hair was shingled by his ma
Who cut it straight behind;
He has a lurid color that
Is due to sun and wind—
He's lost the teeth he had in front
But doesn't seem to mind.

His thoughts are on those apples now,
Not those within his hand,
But those inside of him which make
His tummy-tum expand.
For when they get to working well
His howls will drown the band.

The Apple Scab and Its Control

By PROF. ERRITT WALLACE
OF CORNELL UNIVERSITY

AT the forty-seventh annual meeting of the Nova Scotia Fruit-growers' Association, at Windsor, N. S., November 28, 1910, the first and most important question was, "When shall we spray?" This is more important than the other question, "What shall we spray with?" We are convinced that the poor set of fruit in some sections of New York State the past season was due to no other reason than that the spraying was not done at the right time. Hundreds of thousands of dollars are lost each year because of such mistakes and neglect in regard to spraying. The scab disease of apples is caused by a very minute plant which we call a fungus. It grows in the skin of the apple, forming the black spots so familiar to you all. Every scab spot starts from a spore (or seed) which germinates, grows into the skin of the leaf or apple, and continues to grow until the scab spot is formed. Now it is just as impossible for these spores to germinate without moisture as it would be for a wheat seed to germinate in a dry bin in the granary. This explains, then, why we have so much more scab during wet than dry seasons.

Now, we may ask, How does the spray prevent infection? It does so by coating the surface of the young fruit or leaf with a substance which prevents the spores from germinating. Bearing this in mind, we can return to the question, "When shall we spray?" We must spray before this infection has taken place. Since infection takes place in the rain, or while the trees are wet, we must spray before rains to prevent it. This is a disease you cannot cure; you must prevent it. Don't wait until the rain is over, fearing that it will be washed off. Twenty minutes before the rain comes is sufficient to hold it quite well. After the wet weather is over the spray is not needed. "How

early in the season must we begin to spray?" This depends largely on how early the spring crop of spores is ripened up. The fungus is carried over winter on the dead leaves on the ground, developing a crop of spores in the spring which are shot into the air like peas from a pop-gun, and carried to the young leaves and fruit buds by the wind. Watching this for the past three years we find that in New York State these spores begin to ripen up about the time the blossoms are ready to open. Therefore we can usually prevent the early scab infection by spraying just before the blossoms open. This application is important when the early season is wet, for two reasons. First, the scab attacks the stems of the blossoms and they fall. You will complain of a poor set and consequently a light crop. Secondly, it attacks the leaves; and although often not conspicuous it breaks the skin of the leaf, so that when spray is applied later it enters the leaf and burns it. We are often asked how early may this first application for scab be given? Will the dormant spray for blister mite made before the leaf buds burst answer for this also?

Remembering what I have already stated, that we prevent scab only by coating the surface of the young fruit bud and leaf to prevent the fungus from getting into it, the case seems clear. How can we coat the buds and leaves with the spray before they are opened?

This is not all theory, however. We have tried it for the past two years and find that the dormant spray has practically no effect in controlling apple scab. The proper time, then, for the first application for scab, at least under New York conditions, we find to be after the buds and leaves are exposed so that you can get at them, but before the blossoms have opened, getting it on ahead of the rains if possible.

EATON'S APPLE SHOW

Fruit from the **OKANAGAN VALLEY**

OKANAGAN APPLES
PRODUCED & PACKED BY
OKANAGAN FRUIT UNION LTD.
VERNON BRITISH COLUMBIA

A Magnificent Display of Beautiful Fruit, Choicest Culture of the Okanagan, Picked and Packed Specially for This Eaton Fruit Exhibit

Thursday, November 3

It's just such splendid apples as these that have, for five successive years, captured the highest honors at the Royal Horticultural Society's Exhibition, London, England. That have swept the boards of other notable Horticultural Exhibitions in Great Britain, and that have carried off premier honors in open competition with the choicest productions of the most favored fruit-growing districts of this continent.

Five full carloads of this splendid fruit arrive to-day, and to better give them the display they merit, the entire range of Forty-Two show windows will be given over to them as well as a large section in the Grocery Store on the Third Floor.

It's an event that will emphasize and bring home to every individual who thinks, the comparatively close and direct source of supply that Winnipeg can draw upon for the finest fruit that is grown. In this Apple Show will be featured the following splendid varieties of apples:—

**Jonathans
Baldwins**

**Wagners
Salome**

**Spies
Gano**

**Rome Beauty
Sutton Beauty**

Such great care has been expended in preparing this exhibit that it will be difficult to find an apple that is not perfect in color, that is not of good size and which is not full flavored—deliciously so.

There'll be over 3,300 cases of this beautiful fruit—a small quantity, however, judged by the price we shall mark it at, for it is our intention to price it "close," for the development of this great country and the exploiting of its resources are quite as much an object to this institution as the mere making of money, and when occasion offers—it's never slow to lend a hand. To this end this Apple Show has been planned, bringing us in closer touch with ourselves—the far West with the middle West—directing attention, not to riches of wheat or minerals with which this Western country is so highly favored, but to luscious fruits in greatest profusion—a ready source of supply to the West and to Winnipeg.

While we have made the price so low as to insure quick and ready sale—delivery will not be effected until the close of the show.

See the street parade of this exhibition to-day from the Depot to the Store.

THE T. EATON CO. LIMITED

See Retail Announcement on Page 12



OKANAGAN APPLES HAVE AN INNINGS AT WINNIPEG

I wish to emphasize again how important this application may be. We feel confident, after having observed results in a large number of orchards in Western New York, that the failure of the fruit to set was in many cases due

to an early attack of scab. Our own experiments at Sodus also added evidence to this conclusion. Properly sprayed trees uniformly had a much better set of fruit. On pears this was demonstrated beyond doubt.

A block of 75 Duchess trees well sprayed in our experimental plot yielded 16 times as many pears per tree as the adjoining block in the same orchard, sprayed by the owner only after the blossoms fell. The set was poor in this case even on our plot, but the contrast was evident, nevertheless. It is true that these results would not obtain every season. If we were sure the early season would be dry this early spraying could be omitted without loss. It is largely, then, a form of insurance. Perhaps if one could watch the weather closely enough, this could be omitted many seasons. The second application should be given immediately after the blossoms fall, or when about two-thirds have fallen. By this time new surfaces have been exposed by growth, which will not be protected by the early spray. This is usually found to be the most important of all from the standpoint of producing scab-free fruit.

If only one application is to be given I should make it at this time. This is also the most important in controlling the codlin moth, and the poison combined with the fungicide makes this application the most important one for the two worst enemies of the apple crop—scab and codlin moth. This should never be omitted. The third application should be made about two weeks after the second. Like No. 1, its importance will vary with the season.

Some seasons a fourth is found to be necessary, about seven to eight weeks after the third, to prevent a late infection that sometimes occurs as the fruit begins to ripen up; and also to protect against a possible second brood of codlin moth. Whether either of these possibilities require consideration under Nova Scotia conditions or not you know better than I.

Now comes the question, "What shall we spray with?" As you all know, Bordeaux mixture has long been the standard fungicide for this purpose. It has been very efficient in controlling the fungus, but has under certain weather conditions shown a decided tendency to russet the fruit, and in some cases cause

objectionable foliage injury. This has been known to occur in many cases where all known precautions have been taken, and it has been demonstrated beyond doubt that wet weather following soon after the application favors Bordeaux injury, causing russetting of fruit and burning of foliage. It is only within the past two years that considerable agitation has been aroused concerning the substitution of sulphur compounds for Bordeaux in the control of fungus diseases of plants. Confining ourselves to the work on apples, we find that concentrated lime sulphur solution properly prepared and applied, in combination with lead-arsenate, has been successfully used in an experimental way for the past four years and by many practical men on a commercial scale during the past season.

Prof. Cordley, of Oregon, reports successful control of apple scab as early as 1907, and that the russetting of fruit which resulted from the use of Bordeaux was avoided. His results were equally good in 1908 and 1909. Scab was as effectively reduced in every case by lime sulphur as by Bordeaux. There was no russetting on lime sulphur sprayed fruit, while on the Bordeaux plats it ran from 31 to 52 per cent. Prof. Scott, of Washington, D. C., reports experiments in Arkansas in 1908, and in Virginia in 1909. The result in both cases agreed in general with those obtained by Cordley in Oregon.

Scab was controlled as well by lime sulphur as by Bordeaux, and very slight or no russetting of fruit followed the use of the lime sulphur spray.

Prof. Brooks, of New Hampshire, reports that in 1908 scab on MacIntosh was reduced from 61 to 15 per cent. by Bordeaux and to 14 per cent. by lime sulphur.

In 1909 at Cornell, scab on Greenings was reduced from 42 to 3.6 per cent. by lime sulphur, and to 3 per cent. by Bordeaux. In 1910 it was reduced from 98 to 11 per cent. on Baldwins by lime sulphur, and to 18 per cent. by Bordeaux in one orchard, and to 14 and 17 per cent. respectively in another.

On Greenings it was reduced from 79 to 10 per cent. by lime sulphur and to 17 per cent. by Bordeaux. The Hubbardston had 94 per cent. on the unsprayed and 3 per cent. on the lime sulphur trees. There were no Bordeaux trees of this variety. Another Greening orchard gave 6.9 per cent. on trees sprayed with lime sulphur, and 6.6 per cent. on the Bordeaux plat.

Summarizing these results, we have a record of three years for Cordley in Oregon, two years for Scott in Virginia and Arkansas, not including the present season, and two years of our work at Cornell. Aside from this experimental work, a few growers made the venture and used lime sulphur as a summer spray in 1909, and a very large number in 1910. Some conflicting results are reported, as would be expected. The conclusions to be drawn from the sum of all this work, however, is that lime sulphur solution, properly prepared and used, may be successfully substituted for Bordeaux mixture as a summer spray for apples, its chief advantage being that it largely if not entirely avoids the danger of russetting of the fruit which so often follows the use of Bordeaux, and that aside from russetting, the fruit has a decidedly finer finish where lime sulphur is used. It is well known that Bordeaux injury is most likely to occur when wet weather follows soon after the application. With the lime sulphur spray, we seem to be less at the mercy of weather conditions. The chemical properties of the two fungicide are entirely different. In properly made Bordeaux the copper which is doubtless the caustic or burning ingredient, is in the insoluble or harmless form when applied, and does not cause injury until it has been chemically changed by exposure to certain weather conditions. In case of lime sulphur, the soluble sulphur which is doubtless the caustic ingredient is applied in the soluble form and soon changes to the insoluble. We are convinced, then, that whatever burning is caused by lime sulphur is caused at once, while the spray is drying on the tree. The weather following the application would, there-

fore, be expected to have little or no influence on the amount of injury in the case of lime sulphur. In fact, we have sprayed with lime sulphur in all kinds of weather, and from carefully kept notes have been unable to correlate the amount of injury with any particular weather conditions. We are convinced, however, that the weather conditions of the season previous to time of application may have an influence in producing a foliage that is more or less susceptible to injury. We have noted that in general apple foliage seemed to be more easily burned by lime sulphur in 1910 than in 1909 in New York State. This we believe to be partly due to the fact that the wet spring of 1910 was more favorable to fungus infection which, as already described, made the leaves more susceptible to spray injury. It is also quite possible, as claimed by Prof. Cordley, that the season affects the leaf physiologically to make it more or less susceptible to spray injury.

It is therefore true that while there seems to be little danger of fruit injury from lime sulphur, we do have the problem of foliage injury to contend with. Many growers have had slight, and a few, quite objectionable injury. In most cases this occurs all at once, and the trees soon recuperate.

What we want to know then is, what precautions can be taken to avoid the danger of an objectionable amount of foliage injury? Most cases that we have been able to inspect personally have been traceable to one or both of two causes. In many cases a microscopic examination would reveal the fact that the scab fungus was present in almost every burned spot, and in many cases the trees or certain branches had been too heavily drenched. Over-drenching of the foliage is very likely to cause injury some seasons. The spray should be thoroughly applied or evenly distributed so as to coat all parts, remembering that the spray only protects those buds that are actually coated. On the other hand, holding the nozzle still in one place too long to over-drench that part of the tree should be avoided. We have been

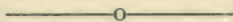
able in this way to spray many acres of orchard, satisfactorily controlling scab and codlin moth and retaining as healthy a foliage as could be desired. A slight spotting of some leaves occurred soon after the application, but this could hardly be detected a few weeks later.

Another important question is what poison can be combined with the lime sulphur to control the codlin moth and other insects? All the above discussions refer to the use of lime sulphur combined with lead arsenate. It had been predicted that the addition of lead arsenate would reduce the fungicidal value of the lime sulphur solution because of a chemical reaction. We have tested this point very thoroughly this season, and find that the effect is exactly the reverse of this prediction. The fungicidal value of lime sulphur seems to be almost if not quite doubled by the addition of the lead arsenate. Evidently then the chemical change is beneficial rather than otherwise. Arsenite of lime was quite highly recommended by some a year ago, but the work of the past season has demonstrated that this combination is likely to cause serious foliage injury. Paris-green has given similar results. At present lead arsenate is the only poison that we know to be safe for use with lime sulphur on foliage. There are many forms of lime sulphur preparations. The above remarks apply only to the concentrated solution. It can be prepared at home or purchased from several manufacturing firms. The home boiled product, if properly prepared, gives practically the same results as the factory boiled. It is prepared by boiling together in a large pot 60 pounds lime and 125 pounds sulphur, with enough water to give 50 gallons at the finish. Boil about one hour. When cooled to 60 degrees Fahr. its strength is measured by testing with a Beaume hydrometer and diluted accordingly.

A good commercial concentrate should test about 33 degrees Be. and should be diluted about 1-40. To this may be added lead arsenate at the rate of 4 to 6 pounds per 100 gallons, and the spray is ready for use.

In conclusion, let me say that I have talked with a large number of growers of Western New York, and feel safe in saying that more than 90 per cent. of those who watched the results of the past two seasons will not use Bordeaux mixtures for apple scab next year. Bordeaux as a summer spray for apple scab, we believe, is largely a thing of the past. We would not say that lime sulphur solution has come to stay. It will stay only until we find a better. It is not perfect, and we are not going to rest until those imperfections have been overcome or a more perfect substitute has been found.

The ideal spray would be one which could be effectively applied under all conditions without the slightest possibility of injury to fruit or foliage. This is not an impossibility. We believe it is coming soon.



A GOOD FRUIT CAKE.

ONE pound flour, one pound sugar, one pound butter, two pounds raisins, one pound currants, one pound figs, one pound almonds (blanched and chopped), half pound citron, sliced thin, half grated nutmeg, half teaspoon cinnamon, quarter teaspoon cloves, ten eggs, one-half cup brandy mixed with one-half cup milk.

Cream butter and sugar, add yolks of eggs and beat light. Have all the fruit mixed, slicing the figs. Sift flour twice and add one-half to the fruit, mixing thoroughly. Add other half of flour to the creamed butter, sugar and eggs. When well beaten add stiffly beaten egg whites and then the fruit. If one does not have the almonds and figs, use three pounds currants. This can be baked in one large pan, but prefer two smaller ones. Line pans with thick wax paper, or buttered paper, and bake four hours in rather cool oven. For the benefit of those who object to the use of brandy, we may say that in the long baking the alcohol is evaporated. However, if for any reason brandy is tabooed, use all milk and a tablespoonful vanilla.

Walnut Growing

By CHAS. A. CHAMBERS, FRESNO, CAL.

AS far as the commercial varieties of soft-shell walnuts are concerned, opinions differ as to the relative merits in the different localities in which these nuts are grown on a commercial scale. There are many expert walnut-growers in this state, and I would not venture to advise which particular nut to grow in order to fetch the best returns. I will leave this for others to decide and wrangle over. From time to time we read in the papers opinions from various parties proclaiming such-and-such a nut to be the peer of them all—the best cropper, finest quality, etc.

In this article it is my desire—waiving the variety to plant, which will have to be determined by the planter after he has looked into his soil and climatic conditions—to give my views as to how anyone can engage in walnut-growing at as little cost as possible, especially when their means are limited. In many soils trees grown on their own roots from selected seed make magnificent trees, heavy croppers, giving nuts of good quality.

Mr. Thos. Jacob, of Visalia, California, has a walnut grove on bottom land which was planted some sixteen years ago from selected seed of the Santa Barbara variety. Many of his trees at this writing measure two feet in diameter, fifty to sixty feet high, and are well shaped and heavy producers. Mr. Jacob finds ready sale for his walnuts, and he has a steady list of customers ever since he commenced to market the nuts. I will say this much, however: the walnuts grown by Mr. Jacob in his grove vary in size, but not in quality, so far as the meat is concerned. The majority of his trees produce a fine commercial size, while a few crop a smaller nut. This is the case with pretty nearly all of the nut family—to vary from the parent.

The walnut, as is well known, requires

a very deep soil; and whether grown on its own root or worked on black walnut stock, the tree sends down a tap root that almost equals in size the body of the tree above ground. This is the case especially when the trees are young. After a time the top, of course, outgrows the size of the tap root.

In our walnut nursery we never run a digger under walnuts; if we did, more than half of the tap root would be cut away, which is too much of a shock to the tree. On account of walnut trees possessing such a big tap root, it is a waste of time to plant them on any other than the deepest soil. I have examined walnut trees after six years of growth and found them taking on a sickly appearance. Some said the trees had blight, while others said it was sunburn; in fact, everything in the category of tree and plant diseases was diagnosed. On digging down around the tree I found that the tap root was suddenly stopped in its attempt to get a firmer hold on the ground by a basin of hardpan. I am of the opinion that when this tap root is interfered with and jammed next to a solid mass of rock or hardpan it is pretty much the same as if a person tried to get into his cellar through a cement sidewalk. Of course, hardpan can be blasted; and if this is done carefully and thoroughly before planting the trees it is possible that the soil conditions will take care of the tap root. However, when one blasts for walnuts he must do it on a larger scale than when blasting for trees that do not require much outlet. The walnut is a long-lived tree, and needs more extensive preparation when being planted than would the average deciduous fruit tree. Give a walnut tree a good start and plant it in soil where the tap root can go down as far as it likes, and the tree will thrive and do well, providing, of course, the climatic surroundings do not interfere.

Grafted walnuts are very expensive and are beyond the means of the average farmer, especially where one with limited means intends to plant a big acreage. As a consequence, a great deal of first-class walnut land is planted to cheaper trees, or possibly grape vines, owing to the shortage of money. Grafted trees sell for from \$1 each to as high as \$3, depending upon the variety. At a glance one can see that this requires quite an outlay of money. How can this be remedied? one will ask. Another will say, "I would like to plant out a grove of walnuts, but it would break me up in business to do so, after paying for my land, and on top of this purchasing the necessary trees." As a result he is, in common parlance, scared off.

Now, if I intended to plant a walnut grove or orchard, this is the plan I would adopt, whether I had large or small means, and I will give my reasons for so doing.

In the first place, I would select a proper location so far as soil conditions were concerned. After I had satisfied myself on this point I would prepare my ground in the usual way when planting, or preparing to plant, a regular orchard. Now, we will assume that I intend to plant 100 acres to some well-selected variety of commercial walnut. I would figure on planting my trees not less than 50 feet apart, which would require 1,700 trees. I have seen some plantings made 40 feet apart; but I would not advise this distance, owing to the very large growth the walnut attains at a fair age of maturity. I would next order 150 to 200 trees from some reliable nurseryman of the variety I had decided on, and plant them in a solid row 50 feet apart—along the border preferred. Meantime I would procure sufficient black walnut seed, carefully selected, to plant in the exact spots the trees were to be grown in orchard form—that is, 50 feet apart. In each hill I would plant at least 10 walnuts, which makes an allowance for any defective or non-germinating seed. It is possible that every nut so planted would sprout. If so, it would make no difference, for

when they grow up it is an easy matter to select the best specimens and cut back the balance below the ground. It is a good plan, however, to permit two seedlings to grow, in case of some accident happening to the original one selected.

After the seedlings have attained their proper growth and the right season comes round, they can be grafted with wood obtained from the original parent trees bought from the nurseryman. Of course, it is not necessary to use the wood from the trees you have bought, nor to buy your original stock of 150 trees, if you can obtain grafts from the nurseryman when your trees are ready to be grafted. My experience has been, however, with some valuable sort, not to be able to get grafting wood. The nurseryman will sell the trees as a rule, but very few will sell grafting wood, claiming that they need it for their own propagation. If you have your own trees you are not at their mercy; hence this is why I advise the buying of a sufficient number of trees in the first place, in order to not be disappointed in securing your grafting wood. How often does one have to pay \$3 each for a large, well-grown walnut tree, and if he wants to buy grafting wood the seller will charge 50c to \$1 a foot. I am speaking of the newer varieties of walnuts—those that bear young and produce large commercial nuts. Of the older standard sorts I suppose all the grafting wood could be obtained at little or no cost. In this case only the walnut seed can be planted, without going to the trouble of getting a start of the parent stock.

One would conclude, perhaps, that to adopt this method of getting a walnut grove started would put them back a year or so. This is not the case in the long run. At first it may seem so; but I'll venture to say that if my plan were to be carefully carried out, it would be found that walnuts planted by the seed method would do better and grow faster than trees that were transplanted, jolted around, kept out of the ground, and otherwise shocked. Trans-

planted trees need extra good care to establish them, and any neglect, especially with the walnut, fig and olive, will cause a high percentage of loss. On the other hand, when your seedlings are established, their growth is not interfered with. The walnut seed when planted, as stated before, can easily be watered. It is not necessary to irrigate them with the open-ditch or furrow process. Get a sled and equip it with a barrel or tank; drive down the rows, and water every hill or spot which contains the black walnut seed. The seeds require a good deal of water to start germination, but they are easily grown when ordinary care is exercised. When ready to graft your trees be sure to get someone who understands the work, and do not let a house carpenter do it, nor an expert full of wind and whiskey. Good, practical grafters can be found in almost any community.

While the walnut grove is getting a start and you are carrying on the work,

you can, if you wish, plant something between the rows of the proposed walnut grove. Just what one should plant depends on climatic conditions. Annual crops, as well as permanent ones, could be planted between. The permanent ones, however, would have to be eliminated after the walnuts attained shading height. In the fig orchards of Fresno and Merced counties many vineyards are set between the rows. The grapes begin to bear after the second year, and five or six good producing crops of grapes are harvested before they are made to give way to the fig. There is no reason why one should not plant grapes among his walnuts or a row of deciduous fruit trees. The walnuts would not interfere with the deciduous trees, nor the latter with the walnuts, for twelve or fifteen years. Meanwhile an income could be realized earlier on an investment.

Ontario's New Fruit District

MR. J. M. McADAMS, writing to the Toronto "Globe," says:

The rapidity with which a new fruit district can be opened up, and the success with which growers can cooperate to develop a distant market, have been strikingly exemplified at Sarnia. The south shore of Lake Huron stretching eastward from that town has become known as an ideal area for the production of tender fruits and early vegetables, being as mild as the Niagara district, and it claims to have a slightly greater number of growing days in a season than even Hamilton. This season the growers have pooled their entire product, disposing of everything through a single agency, and have achieved remarkable success in securing orders all through the season from western points. The rapid and frequent steamship service of the Northern Navigation Co. from Sar-

nia has been fully made use of, and it is not unusual for carload lots of perishable small fruits, such as berries, to be picked, crated and deposited in cold storage on the steamer within three hours' time.

When the orders arrive from western points, usually by telegram, the proper growers are notified by rural telephone from headquarters at Sarnia, and no time is lost. The industry which has sprung up around Sarnia is a notable example of intensive farming, and remarkable yields are secured from small areas. It is believed that in course of time the whole northern fringe of Lambton will be converted into fruit farms.

Five steamers, each making three runs to Fort William and other western ports, carried little but apples, all for shipment to the Sudbury district, Manitoba, Alberta and Saskatchewan.

Winter Injury to Fruit Trees

ON this important subject the Ottawa "Citizen" makes the following observations:

During the past twenty years much experience has been had at the experimental farm here in winter injury to fruit trees, and the observations which have been made during that time and the conclusions drawn and recommendations made are now summarized, in the hope that much injury will be prevented by adopting the best methods. It would appear that there are at least ten distinct forms of winter injury.

If one could make an accurate estimate of the number of fruit trees which have been winter killed in the colder parts of Ontario, the province of Quebec and in New Brunswick, the figures would be astounding, they would be so large. Trees that were killed the year after planting; trees that were killed just when they were beginning to bear fruit; and trees which were in their prime and bearing bountiful crops, all have suffered. This terrible destruction from winter has caused great discouragement among the people and has been one of the chief causes of the slow development of the fruit industry in the colder parts of Canada.

Much of this loss could have been avoided if the hardiest trees only had been planted, but how few there are who know the details connected with the establishment and maintenance of an orchard and who know there is almost or quite as much difference in the hardiness of varieties of fruits as there is between the hardiness of the tenderer and hardier kinds of vegetables. All farmers have learned by observation that with a very slight frost potato tops will be killed, but that it will take a much lower temperature to kill a cabbage. But the cause of death in fruit trees still continues to be a very mysterious thing to most farmers who, when a tree has been root killed, for instance, see it leaf out and bloom, but eventually wilt under his

very eyes during the summer without any apparent reason. Unfortunately this lack of knowledge on the part of the farmer has been taken advantage of by unscrupulous men, and farmers have been urged to buy the varieties of fruits which appeal to them most strongly in the colored plate or from the glowing description given by the agent. Of late years our best nurserymen seem to be impressing upon their agents the importance of offering only those varieties suited to the district in which they are sold. These agents often call at the experimental farm to get information on the fruits most suited for the districts they are working in. For a long time it was not known what varieties of fruit were hardy in the different parts of the province of Quebec, but experience has taught which will succeed, and the results of this experience have been recorded. With the literature now available and the information which may be obtained by applying to the proper authorities there is no reason why anyone should plant varieties which will not succeed with him, provided he has the proper soil in which to grow them and gets good trees and looks after them properly.

Bark-splitting is an injury which usually occurs on young trees. It is due to the expansion caused by frost when trees are in a very succulent condition. It occurs when trees have grown late in the fall and there is a sudden low drop in temperature. It will occur when trees have grown late and there is a heavy fall of snow before the ground freezes. The soft snow appears to soften the bark of the tree, and when the temperature drops suddenly the moisture under or in the bark expands and loosens the bark from the trunk or kills the cambium. In Nova Scotia the Gravenstein and other apples are affected with what is known there as "crown rot," which apparently destroys the bark about the tree near the

ground. From what can be learned of this injury, which occurs mostly in well cultivated orchards and in moist ground, the cause is that the Gravenstein grows too late and is subjected to the conditions just referred to, namely, of being too full of sap. Traces of disease have been found at these injured parts, but we believe that the disease is secondary rather than the principal cause, though we have not had the opportunity to study the injury there. Bark-splitting can be prevented to a large extent by having the wood of the trees well ripened when winter sets in, and this can be brought about, usually, by stopping cultivation in good time. When young trees are injured by bark-splitting they may be saved if not too badly hurt by covering the injured parts with grafting wax.

Trunk-splitting, while not a common injury in orchards, is not rare. It was long thought to be due to the expansion of trees which had been "hide-bound." While so far as is known no experiments have been tried to determine the cause of trunk-splitting, yet several theories have been advanced, the best one being that the splitting is due to a sudden lowering of temperature which cools the outside layers of wood in the trunk, making a considerable difference in temperature between the outer and inner layers, causing the former to contract. A clearer example is the cracking of ice when there is a sudden fall of temperature, due to the contraction caused by the upper layers of ice coming in contact with the cold air. It is trees which have made late growth and are well charged with sap that are usually affected, hence thorough ripening of the wood is necessary for the prevention of this injury also.

The injury to apple trees known as sunscald is one of the most serious hindrances to successful apple culture, particularly in the northern and eastern parts of Ontario and in the province of Quebec. Newly planted or young trees are, as a rule, more seriously affected by it than older ones. The unhealthy appearance of the bark on the trunk of the

trees facing the south and southwest and on the larger branches is the first indication of this injury. Afterwards the bark and wood dry up and fall away. Trees are often so badly affected that they die. Sunscald occurs during the latter part of winter or very early in the spring, when there are warm days and cold nights. The results are apparently the same as happen when many plants are thawed out suddenly—they die. In the case of the apple trees, only a part of the trunk is thus affected, being that part which is exposed most to the sun. The hardiest varieties are the least affected. The injury may be prevented to a large extent by only planting trees which are headed low, thus exposing but a short trunk to the rays of the sun; also by inclining the young trees somewhat to the southwest when planting, thus preventing the sun's rays from striking the trunk except for a short time each day. When trees have been planted and are liable to become sunscalded the trunks may be protected by using a veneer of wood which encircles the trees, thus preventing the rays of the sun from striking the trunk. The protector is better loose, so that there will be an air space between it and the tree. White building paper tied around the trees is also useful. Boards, sacking and many other things may be used to protect the tree from sunscald. Nothing, however, that will be likely to harbor mice should be used.

The effects of crotch injury have been very serious in the province of Quebec and in some parts of Ontario in recent years. On examination it is found that in the centre of the crotch and on the branches diverging from it, but close to it, the bark is dead. As a result of this killing in the crotch the tree loses its strength there, rot sets in, and eventually the tree is destroyed by the loss of one limb after another at the crotch. This injury is probably due to ice lodging in the crotch. There are several theories as to why the ice should cause the bark to die. One is that it acts as a lens and concentrates the rays of the sun, causing

a scalding of the bark. The position of the injured limbs alone would seem to be sufficient to show that this theory is not a good one. It seems more likely that the injury is caused by the softening of the bark by the melted snow or water before freezing the bark, which is, even before this, probably tenderer than at any other part, owing to it being most shaded there in summer, subjected to severe frost, it and the cambium being both destroyed. One of the best means of preventing crotch injury is to grow trees with as little crotch as

possible, training with a central leader. When trees of certain varieties are liable to be killed after heavy bearing, thinning of the fruit should be practised in order to prevent the lowering of vitality. The injury to branches of shrubs or herbaceous plants can often be prevented, as is well known, by thawing them out gradually, when the sap, which, on being frozen, is withdrawn into the intercellular spaces, will return to the cells, whereas if thawed out quickly the cells might break down.

My Native Trees

AN ONTARIO GIRL'S LAMENT ON THE WESTERN PRAIRIES

Why does my heart so weary grow?
 There's surely everything to please:
 A land of peace and plenty given,
 But, oh! where are my native trees?

Kind friends surround me everywhere,
 The harvest waves before the breeze,
 There's scrub and poplar galore,
 But I want you, my native trees!

Where is the lovely woodland smell?
 A "bluff" does only fret and tease.
 Where is your dignity and height?
 My native trees! My native trees!

That I might walk beneath your height,
 And, gazing up, my heart appease,
 Cathedral of my childhood's days,
 My native trees! My native trees!

I travel on from north to south,
 In east or west I find no ease,
 Till, like the dove, I find again
 My native trees! My native trees!

Whether close together in the woods
 Or throwing shade upon our leas,
 My heart lies like the ivy low
 When torn from thee, my native trees!

Oh! pine and beech and maple trees,
 Mere wealth alone can never please
 A heart that has thy beauty known
 In seasons all, my native trees!

—Elizabeth Lindsay, Toronto.

"Showing Us," by a Canadian

Maxwell Smith, of Vancouver, Editor of
The Fruit Magazine, Discusses the
Strictly Apple Show

(From the Portland "Oregonian" of December 15, 1910)

ADDRESS DELIVERED AT THE RECENT MEETING OF THE
OREGON STATE HORTICULTURAL SOCIETY IN PORTLAND

MR. PRESIDENT, Ladies and Gentlemen,—I feel that the first thing I should do is to apologize to this audience for being before you without any preparation and without anticipating the possibility of being here more than a few hours. Yesterday afternoon at 2 o'clock I did not know I was going to be here, but after reading over your published programme and seeing that your committee had been so very kind as to place my name in publication, I felt that I would not be exactly treating the management of this convention fairly by not coming, and also that I would be disappointing myself in not meeting a great many old friends in the city of Portland and also having the pleasure of making a few new acquaintances.

Now, Mr. President, I hope the audience will bear with me this afternoon, because what I shall say may be somewhat disjointed, and I may not be exactly able to please all of you. The fact is, Mr. President, that the things people like to hear best are not always best for them, and it sometimes does us good to hear a few things that are contrary to our own preconceived notions and ideas.

First, let me compliment your society for the very excellent exhibition which you have downstairs. In that exhibition there are some exhibits which are certainly worthy of the very highest praise; on the other hand, there are some that are hardly fit to be called exhibition stuff. But that is just exactly where the advantage of these meetings comes in. The man who has not been able to put up his stuff just right is able to see wherein he has failed.

Now I must say that the last time I was in Portland, seven years ago, I enjoyed my visit very much. It was when the Northwestern Fruit-growers' Association was in its full bloom. The next time I had the pleasure of meeting many of the Oregon people was something like four years ago, in the city of Vancouver, when that association met in the latter city, and it was pronounced the best convention in the history of the association. Since then I have not heard very much about the Northwestern Fruit-growers' Association. Not having seen any obituary notice, I have been wondering whether it is dead and buried or what has become of it. However, I am glad to see that you are carrying on the business of fruit-growing and educating the fruit-growers; and in this connection I would like to say that I do not think it does any of us any harm to step across the border occasionally and see what our neighbors are doing. We have been coming down from British Columbia and the other parts of Canada into the United States for a number of years and have been appropriating just what we considered was worth appropriating in the way of information and methods. There is quite a Scotch element above the international boundary, and we like to keep the Sabbath and everything else worth having that we can lay our hands on. We decided, about a year ago, that it was pretty nearly time the Dominion of Canada instituted a National Apple Show, and we at once proceeded to perform that feat, and it may be of some little interest to those present to hear something about how we conducted that apple

show and what our aims and objects were and some of the results. I am not going to refer you to it with the idea of making odious comparisons, but simply that we may be able to co-operate together and find out as far as possible what is the best way to utilize our advantages.

Mr. President, if I may be permitted to observe, I am just inclined to think that we may be disposed to multiply apple shows a little too fast, and produce very much the same results as we have in local fall fairs.

We considered, north of the boundary, a few things in connection with a National Apple Show. Some of them were these: First, we wanted to be National in reality as well as in name. A National Apple Show cannot and should not be held twice in the same locality, but it should be moved from one province to the other, thus equalizing the burden of expense and also giving equal advantages to the various fruit-growing districts of profiting by the educational and publicity features of the show. We cannot have a national institution of that kind, of an educational character, and keep it in one city, one state or province.

Next in order, to be strictly national in its character, it was necessary that the Federal Government recognize that show. Our Federal Government contributed an educational exhibit which was drawn from all of the apple-growing districts in the whole Dominion of Canada, so that at the First Canadian National Apple Show, in Vancouver, B. C., the first week in November, 1910, we had exhibits from every apple-growing district in the whole Dominion. The Federal Government not only did this, but recognized it still further by contributing toward the expense.

Therefore, we feel, ladies and gentlemen, that in the First Canadian National Apple Show we had the first real national apple show ever held in the world.

I could not help overhearing some remarks by our friend, Mr. Newell, in regard to the Lafean bill on the apple-box question. I am not going to enter into

your disputes and your controversies in regard to the apple-box or barrel question; it is something you must work out yourselves, the same as we did. But we have worked it out, Mr. President, to a certain extent, and I would like to make an observation or two in regard to that—viz., so far as our ideas of democratic government are concerned, you cannot have a legal national apple box planned and set forth by any particular state or division of states or any particular province in the Dominion, and the way we got at a legal apple box was to have a conference of all the provinces in the Dominion that produced apples, and by a system of compromise and argument and take-and-give policy we arrived at a conclusion and an agreement whereby we have an apple box which is legalized by the Federal Government, which is the only government that can make it effective; provincial or state governments cannot make it effective outside of its own boundaries; so we have a legal apple box measuring 20x11x10 inside, the same as we have a legal barrel of 96 quarts.

In regard to our grading, we have made some progress in that respect as well. I am sorry to say that it is not exactly satisfactory, but it is a long step in the right direction of making uniform the grade of apples shipped by the whole Dominion of Canada, which has been justified by our returns from the English markets since that law was put into force.

In connection with our National Apple Show, I do not think I would be doing my duty as a citizen to the Dominion of Canada if I did not show here the advantages of working together in the way that we did in the production of that show. We did not hesitate for one moment to come south of the international boundary for the best secretary in the Northwest country, a man whose ability in publicity work did much for the success of the enterprise—L. G. Monroe. While I was at Spokane a few weeks ago, attending their third so-called National Apple Show, they rather twitted us about coming south of the boun-

dary for our secretary and about having a queen of their National Apple Show, to which I replied that the king of the Canadian National Apple Show was still a bachelor, that there was no duty on the importation of brides, and that instead of simply having our secretary from south of the boundary, we might have a queen also.

First and foremost, we endeavored to have nothing on exhibit except what was strictly exhibition fruit. A large aggregation of commercial apples brought together is not an exhibition, and I think we succeeded fairly well in our endeavor to make our entire show an exhibition. Another feature that we endeavored to emphasize was that the fruit must be displayed in the most artistic manner possible, and that no man, however prominent, would be allowed to display any highly colored, unsightly advertising banners or decorations. The apple cannot be decorated with anything that will improve it. All of our advertising cards were confined to the minimum, and large banners on exhibits displaying advertisements were strictly prohibited, and furthermore, there were no fakers or side shows in the entire proposition. (Applause.)

Through the columns of *The Fruit Magazine* I have been fighting for some time against the circus features of the ordinary fall fair. I have been met by the management of these fairs with the argument that they have got to have these things to draw the crowd, but in the First Canadian Apple Show we had none of them. There are dozens of people in the city of Vancouver today who are regretting that the show did not run another week. You do not need to have these things in order to make a properly set-up fruit show an attraction.

We also think we succeeded in making the First Canadian National Apple Show the greatest educational undertaking that the fruit industry has ever experienced in the Dominion of Canada. That is admitted now on all sides, and we also succeeded in making it the best publicity scheme that has ever been introduced; therefore I want to emphasize

the necessity and the desirability of having these shows not too frequently, not in too many places, but make them perfect, make them educational in every particular and keep them clean.

In connection with this show, at the request of a large number of fruit men throughout the continent of America, we called a pomological convention for the purpose of considering and making recommendations for amendments to the rules and regulations of the American Pomological Society. The American Pomological Society, you must understand, is American in the broadest sense of the word. It is not simply a United States institution, but it is an institution which takes in North America, which is the United States and Canada.

We had upwards of 100 delegates at that convention from east, west, north and south, and we feel that they started a movement that will be of immense advantage to the apple growers of the entire continent, and particularly to those west of the Rocky Mountains.

Our committee, of which Mr. Newell was one, recommended a number of things, one of which was that the standard of value placed on any particular variety should not be as compared one with the other in any particular locality, but that the standard of value on any particular variety of apple should be the highest standard to which that variety can be produced in any part of the continent. Then you have a purpose for a fruit-grower to work to, to cultivate the varieties which he can produce to the greatest degree of perfection in the locality in which he is operating. If he cannot produce certain varieties to the highest perfection, let him leave those varieties alone and stick to the varieties he can produce in that way, and it will reduce the varieties put on the market, increase consumption and raise the standard all around.

I read in this morning's "Oregonian" that your worthy president here has been giving a good deal of attention to the subject of systematic organization for marketing purposes, etc. I do not think I would be doing my duty if I sat down

without making a few observations along these lines. Systematic organization is the keynote of your success, as well as the keynote of the success of any other industry, and there are so many things that enter into this subject that a brief statement this afternoon would not suffice to deal with it.

I would like to refer to some of the things that we are thinking about north of the boundary; before you get to the market question you have the labor question to deal with. Some of our fruit-growers, particularly the large growers, would like to see a great influx of cheap labor in order to facilitate their operations, without regard to the nationality of that labor or the color of it. Many of us are opposed to that principle, on the ground that you will be sacrificing the national well-being for the profit of a few fruit-growers, and we contend, Mr. President, that we should only encourage a class of labor which has in it the elements of good citizenship. (Applause.) We do not believe in these democratic countries in importing labor that is always going to be labor. We want labor that has ambition in it, an element which can rise up and become employers of labor themselves.

Another question that is agitating our people up there, and which requires systematic organization and co-operation, is the question of technical schools for the instruction of fruit-growers and other classes of people. Some of us contend that you have to get away back of the technical school before you get to the root of the evil that we are now trying to remedy. I believe, Mr. Chairman, that the public school system of the Dominion of Canada and the United States of North America is largely to blame for the deserting of the land, the spoiling of good farmers and the creation of a surplus of poor preachers, lawyers and doctors. (Applause.) You take the curricula of the public schools of these countries and you do not find agriculture in its proper place. No! Notwithstanding that agriculture is the backbone of both of them. These curricula have been framed by men who do not seem

to have any sympathy with agriculture. The consequence is that they have been so constructed that the young man has been lured away from the land and into those other pursuits to augment the army of unemployed in the cities, and before you will find agricultural pursuits in general occupying the mind of the young man as it should, you must have it placed on the curriculum along with the other subjects in the public school. (Applause.) Never mind the High Schools and other institutions of higher education, it is the public schools where the boy or the girl gets his first ideas of what he wants to be and what he wants to follow up, and if he does not get a fair idea of the desirability and the joys and the beauty of the study of nature as he ought, when he gets away from the public school your technical school will not suffice. I want to say that a knowledge of agriculture and plant life will be of a great deal more benefit to the man practising medicine than Greek and Latin will be to the man who is following agricultural pursuits. (Applause.)

I know that you are waiting, Mr. President, to hear the report of your committee. (Audience repeatedly cried: "Go on! Go on!" and the president requested the speaker to take all the time he wanted.) This subject is so big I do not know where to begin and where to drop off. At the same time, there are a few things I would like to emphasize. I believe, solemnly, that we have got to do away with a great deal of selfishness, if we want to broaden out to the highest degree of success in the particular callings in which we are engaged. If you could just come together and co-operate for a while on the best features, both East and West, you would find that the result would be to the advantage of the whole, but as long as you are pulling and hauling you will never be able to accomplish anything. Some people seem to think that co-operation means sinking the individuality and sacrificing principle, a sort of socialistic idea; but it is not so. You may take any industry or large corporation, any national development, and the success of the whole thing is

the result of legitimate and practical co-operation. It has been so from the beginning of the world's history and will continue so to the end of time; you must not only co-operate and organize for the marketing of your fruit, but you must go further. Take the international markets for first base, and find out what are the best varieties or what are the varieties that are in demand on these markets; then you must come to your national requirements and from that come down to your State, county and local requirements and plant only that which is best suited to the locality and produced to the highest degree of perfection. You must co-operate in your methods of cultivation and pruning and spraying, and then you come to your marketing idea, and so on, all of the way through, work together and develop your industry along lines that are laid down by systematic organization, which is simply another name for co-operation, and which is not only the fundamental principle which underlies all human progress and which measures the strength and stability of any specific industry, but it is likewise that vital element which courses through every root, fibre and branch of all higher forms of civilization.

You will remember that King David was minded to build a temple, but there was so much strife and discord in the world about that time that he never realized the consummation of his hopes, but his son, Solomon, who was reputed to be the wisest man that ever lived, not only made friends with his neighbors, but secured their co-operation and assistance, and thus the building of the great Temple at Jerusalem was successfully accomplished, through the co-operation of Solomon, King of Israel, Hiram, King of Tyre, and the thousands of willing workmen engaged thereon.

In more ancient history we read that there was a garden planted eastward in Eden and there in all the glory of his perfection, fresh from the hand of the maker, was placed God's masterpiece, and the father of our race—Adam. For our purpose it matters not whether the Garden of Eden was located, as many sup-

pose, in the rich and fertile valley at the junction of the rivers Tigris and Euphrates, or whether it nestled in some fair and pleasant dell on the vanished continent of prehistoric Atlantis, but we do know that the man made very little progress in the world until he obtained the co-operation of a helpmate.

Now, perhaps you will say I am getting away from the subject. Just wait a minute. If you can just forget your own little vexatious questions for a moment, and with me look away back down through the centuries, and observe for a little the progress of that ancient couple, and from the dim light that comes struggling down through the mist of the years, we observe that just as soon as they began to investigate and utilize the elements with which they were surrounded, one of the very first problems which they stumbled over was the fruit question. We do not know what kind of fruit it was that caused the trouble: some say it was a peach, others say it was an apple, others say this and some more say that, but if I were to venture a modest opinion myself, I think I would be inclined to suppose that the temptation that troubled Adam was the same that has come to all of his sons—something more intoxicating than the flowing bowl or the cup that cheers—a "maiden's blush."

As I said, we do not know what kind of fruit it was that caused the trouble, but we do know that it came about through partaking of forbidden fruit, and that is one phase of the subject you will have to contend with just as long as you are in the business—"forbidden fruit." You must bear in mind that there are many varieties, which if you are not warned not to eat you are most certainly warned not to plant, and if you disobey the clarion voice of observation and experience you will reap the reward of time, money and energy wasted, and perhaps find yourselves just where your forefathers were.

As I said in the beginning, I am exceedingly pleased, Mr. President, to be present here today, and I compliment the Oregon fruit-growers on the progress

they are making. I compliment you on the magnificent progress your city has made since I was last in Portland, but let me warn you, do not become too much wrapped up in yourselves and forget that there are others in the world, and do not forget that there is another pebble on the beach of this great Pacific ocean away up yonder in British Columbia. The beautiful city of Vancouver is the Western gate-

way of the nine sister provinces which comprise the great Dominion of Canada; that we are there building up a great nationality, a nation unique in the history of the world, one that was not born of the travail of bloody wars and human strife, but a nation born in peace. Kinsmen, hands across the border, and let us in the future devote more of our time and energy to the discovery of the good that is in each other.

The Deserted Farm Home

Peaceful it stands, the deserted old dwelling,
Bare are the windows that face to the east;
Silent, the empty rooms seem to be telling
How they once echoed to laughter and feast.

Sagging the doorstep, the shutters are broken,
Gone is the clematis that sheltered the door.
Aye! by the rusted lock, mournfulest token,
True! they have fled to return nevermore!

Hidden the fence by the wild morning-glory,
Moss-covered well-curb, the paths overgrown,
Plaintive a phœbe is chanting the story,
Under the eaves where she flutters alone.

Tangle of weeds and thicket of briar,
Waste, where the garden once shed its perfume—
Scarlet sage flaunting its gay plume of fire—
Humming birds sipping the riotous bloom.

Over it now the bright sunbeams are flecking
Shadows from trees, in the full noon-day glow,
Shining where still the sun-dial is checking
Slow hours away, as it did long ago.

Wandered here then through the long summer hours,

Fair as a flower, a sweet lady in grey;
Missing, the same as the dear old-time flowers,
Oh! the sad day that she vanished away!

Haunted the barn where the palfrey once rested,

Dusty the cobwebs have curtained his stall,
Never a coo where the doves sweetly nested;
Pitiful silence now broods over all.

Memories all? No! the orchard is throwing

Welcome to stranger and bird on the air,

Under the trees where the blossoms are blowing,

Home, here at last, seem to breathe everywhere.

Homelike and sweet, yet deserted and lonely,

Voices of Nature for dear human kind,

Promise of plenty, yet harvested only
By the clear air, and the sun, and the wind.

Wistfully someone, somewhere, must be sighing

For a fair spot whence they need never roam;

Surely the old place is lonesomely crying—

"Come to me, dear one, and make me a home."

—Magdalene Merritt.

Tree Pedigrees

By H. M. LIGHTY
SUNNYSIDE, WASH.

MY first fruit-register idea came while listening to an address by Professor W. S. Thornber, horticulturist from the State of Washington, U. S. A. I subsequently wrote to the gentleman, asking to be cited to books and possibly bulletins by colleges on such development of fruits. To my surprise came the reply that there is as yet nothing written on the pedigree of plants; but the respected gentleman's address was not forgotten, remembering that he advocated the transmission of blood and development of strains, urging the orchardists and nurserymen to propagate only from the best. He also gave me the first positive statement that apples are affected, to some degree at least, in color and possibly in form or flavor by cross pollinization in the row. This has since been confirmed by other experienced orchardists. To know this much alone should be a sufficient basis for the incorporation of a plant registry association. However, to make assurance doubly sure, I sought an interview with Mr. H. M. Gilbert, known as the Apple King of the Yakima Valley. He said: "I now regard the proposition as perfectly feasible, although only a year ago I attributed the variation in varieties to local environment and cultivation." Later Mr. Mike Horan, designated as the Apple King of the Wenatchee Valley, and a live competitor for Mr. Gilbert in honors for the distinguished title in the State of Washington, was consulted. He said: "Certainly, as I have always bred registered animals and found it by far the most pleasant and profitable, so likewise I hope soon to breed registered fruit."

Many other orchardists, nurserymen and professional horticulturists were consulted, with the unanimous opinion favoring the adoption of the system. Among the many may I quote one more?

W. P. Stark, of Stark Bros. Nurseries and Orchards Co., Louisiana, Mo., writes as follows: "For many years we have given considerable time and attention to propagating from select strains, therefore it is a pleasure to co-operate with you. Greater attention must be given in propagation to produce the most vigorous and profitable trees and the highest type in each variety possible. We shall be pleased to hear more of your plans, shall also be glad to have your suggestions which we can incorporate in our recommendations as president of the American Association of Nurserymen. We will also be glad to send the matter to the trade papers. Personally we are glad to hear of your great fruit enterprise."

With these assurances as a basis, the American Plant Register Association was organized, and is being incorporated under the laws of the State of Washington. The effort will be to secure an association of men who are competent to judge, and who will make the admission to the register of such a standard and the maintenance of said standard so high as to command the respect of fruit-growers for all America. The details are yet to be worked out, but in the main the object of the association is to provide a system of registering plants with a view specially to breeding up by selection and elimination the world-famous commercial fruits of the Northwest and Canada. The place of business is Sunnyside, Yakima Valley, Washington, U. S. A. There will also be an "advanced register" to which only such specimens can be admitted as have "made good" or that have scored above a merited percentage on all points. Such only will be entitled to "pedigrees."

Trees propagated from the specimens in the advanced register will possibly only be eligible to registry. There will

be a system of labelling and planting in the orchard, enabling orchardists and the association to co-operate in keeping track of the trees of merit. Having once purchased these registered trees and secured indestructible labels, it is probable that such trees will secure the most favored spot in the orchard and will always be marked and remarked about. They will receive special attention as to cultivation, fertilizer, sufficient but not excessive irrigation—in short, everything possible will be done to induce such trees to do their level best. There can be little doubt that trees admitted to the “advanced” register with a pedigree will become of such value that nurserymen will pay more for their scions and buds for the reproduction of their kind than the grower could possibly realize for the fruit, and that these trees would be pruned and cultivated to this end.

It is also expected that with the help of such an association specimens of merit can be brought properly, quickly and powerfully before the public. For instance, what it took many years for Kellogs, of Three Rivers, Michigan, to do with their “thoroughbred pedigreed” strawberries, and Stark Bros., of Louisiana, Mo., to do with their “Delicious” and “King David” apples, it will be possible to do in a comparatively short time. On the other hand, it will be more difficult for the public to be robbed, faked or humiliated, whether intentionally or otherwise, as happened with the “seedless apple” and “wonderberry.” May we not most certainly look forward to great results from such a system?

It is pertinent to this work to know that it is only one hundred years ago when first the physiological facts were discussed relative to the creation by development of plants and animals. This was by Lamarck, who attributed all to environment. He said that as soil and sunshine, climate and water, induced superior growth of a plant, Nature would provide larger cells, stronger fibre, richer color, and by-and-bye the plant would “get the habit” and become a new and possibly a distinct specimen. This is known as Lamarckism in the

creation by evolution theory. Fifty years later, or about fifty years ago, Darwin told us that Lamarck was mistaken, that creation and evolution came by the “survival of the fittest,” as Spencer puts it. This called forth much greater comment and criticism than Lamarckism. Darwin was denounced by orthodoxy on the contention that apples, as other species, were created by God, not made by man or happened by chance. Just ten years ago Professor Bailey, of Cornell, told us that Darwin was unjustly criticized, that he really believed in Lamarck’s theory as well as his own. And today are we not accepting the position of both these men who, as history goes, are but “recent” writers on the philosophy of creation by development?

It is not the purpose of the Plant Registry Association, however, to produce; it is to induce. We will not philosophize or theorize about sex, pistils and stamens, or transmission by scion and bud in plants; but *will observe what God in nature and man in intelligent manipulation will produce, and make a record of the same.* It is expected that this will be a great help in the development of what we already have in commercial fruits, and possibly result in the creation of new and better specimens. It is possible, and even probable, as a recent writer has said, “that the apples of one hundred years hence will be just as far superior to those we now have as what we now have are superior to the little green things our New England fathers called apples one hundred years ago.”

IMPORTANT CONVENTION.

The regular annual meeting of the British Columbia Fruit-growers’ Association will be held at Victoria on January 6 and 7. A full attendance is requested, as matters of vital importance to fruit-growers will be discussed. This is the fruit-growers’ annual gathering for British Columbia, where an exchange of views may result in united action along correct lines for the furtherance of the industry, and the mutual profit of those engaged in the business.

Canada

Canada, thy children greet thee
With loud notes of sounding praise,
Unto thee with heart and voice
Glad songs we raise.
Canada, we love thy mountains,
Valleys, plains and skies so blue,
To thy laws and to thy precepts
We'll BE TRUE.

Blest art thou great land of plenty,
Land of fruit and golden grain,
Pray that over all thy borders
Peace may reign.
Pray that GOD who gave thee beauty,
Ever keep thy freedom sure,
And like snow upon thy mountains,
KEEP THEE PURE!

Loyal daughter of thy mother,
Brightest jewel in the crown,
Thou hast to a mighty Empire
Brought renown.
Pray that GOD may keep thee loyal,
Adding to the Empire's might,
Ever standing, ever fighting
FOR THE RIGHT.

—*W. H. Kelly*

British Columbia Enterprise

THE Okanagan Fruit Union, which was established in 1909, has for one of its main objects the marketing of the products of the Okanagan Valley, and if possible the export of its products to the Prairie markets, especially to Winnipeg. While the latter was a large consuming centre, a strong prejudice existed in favor of apples in barrels, because of the old custom of selling them in that variety of package. The belief also seemed widespread that while the British Columbia apple looked well, it lacked the flavor of the apple from Ontario. The Okanagan Fruit Union determined, therefore, that there was only one way to overcome these objections, and that was to arrange for a display and sale of apples in Winnipeg upon a large and extensive sale.

In the spring of 1910 the officers of the union met a representative of the T. Eaton Company at the Fruit Convention at Kamloops, B. C. Arrangements were made with a representative of the Canadian Pacific, who were co-operating with the Okanagan Fruit Union, to furnish the necessary cars to take care of the shipment, and on its arrival convey the apples to the T. Eaton Company's store in a procession of teams. The apples were shipped by the Okanagan Fruit Union on October 28th, arrived in Winnipeg 23.30 November 1st, being four days six hours and 46 minutes in transit. The Manitoba Cartage Co. (the Canadian Pacific Railway agents) had fourteen magnificent new two-horse drays on which the apples were loaded and paraded through the streets of Winnipeg, decorated with large banners proclaiming them as British Columbia apples.

The T. Eaton Co., with their accustomed enterprise through their own advertising force and organization, put enthusiasm into the scheme to make it a success. Forty-two display windows, covering a block and a half of their store on Portage Avenue, were filled with the

luscious product of British Columbia, and the next morning the beauty, perfection and superior appearance of the fruit was the subject of remarks on all hands. Horticulturists and others pronounced it to be the finest display of apples ever seen in Canada. Every apple was of exhibition quality, beautiful in color and of delicious flavor. On the third floor of the T. Eaton Co.'s store extensive pyramids of apples had been erected, and attendants were on hand splitting up the apples and demonstrating their superior flavor to all comers.

The Canadian Pacific Railway had supplied large views of the different orchards in the Okanagan and other sections of British Columbia, which were displayed with the fruit. Thousands of enquiries were made by visiting foreigners as to the district in which such superb fruit had been raised. A Western man, who had attended a similar show in Minneapolis of Washington apples, admitted that it could not hold a candle to the British Columbia display. A Belgian said he had never seen such apples in Europe, and purchased several cases to be exported to Europe. Thousands of enquiries were made of the attendants as to the source of the fruit. The apples were a revelation and a surprise not only to the people of Winnipeg, but to hundreds of visitors from Ontario and the United States who visited the T. Eaton building during the week the display was on.

The old objections made by consumers to apples in boxes and to the British Columbia fruit as lacking in flavor were dissipated at one stroke. It is estimated that fully 100,000 people visited the T. Eaton building while the show was in progress. It is impossible to estimate how many surveyed the wonderful exhibit in the forty-two display windows extending along Portage Avenue and the side streets of the T. Eaton Co.'s store. Every apple in the exhibit arrived in perfect condition and perfectly

packed, and was displayed just exactly as it was received from the cars, without any polishing or handling.

The enthusiasm in which the T. Eaton Co. gave their services to this display certainly deserves the thanks of British Columbia people. Mr. J. C. Eaton, president of the company, came up from Toronto especially for the purpose of attending the exhibit, accompanied by a large party of Torontonians. The latter admitted that Ontario could not hold a candle to British Columbia in the way of apples, and admitted that they had never seen such an exhibition.

No apples were sold during the progress of the exhibition, except on the condition that they should not be removed from the store until after the end of the week, so that the display remained intact.

The absurdity of the fear that some have of the possibility of over-production in British Columbia was amply demonstrated; in fact, the exhibition would have been on a still larger scale had it not been confined to the few carloads it was possible to secure. The consumption of apples in Winnipeg alone is equal to the production of British Columbia at present.

The T. Eaton Co. bore all the expense of advertising, and paid out a large sum of money, not only in erecting the display, but in inviting out-of-town people to come in. A large number of visitors from as far west as Calgary came in to the city to see the display.

The show has had the effect of giving the B. C. apple a wide advertisement, and has established its unquestionable supremacy both as to flavor and merits.

Rural Telephones

Bound Volume Sent Free On Request

IN connection with the growth of rural telephone companies throughout the Dominion, a new book has recently appeared on the market which will be of special interest to many of our readers.

Realizing the need for practical information on the subject, the Northern Electric & Manufacturing Company has recently revised into a large volume its bulletin on "How to Build Rural Telephone Lines." This book, bound in stiff cloth-covered binding, contains over a hundred profusely illustrated pages of comprehensive information, carefully indexed into seven chapters.

"How to Build Rural Telephone Lines" deals with the complete story of the telephone, mutual and stock com-

pany organization, line-survey and construction, the installation of the instruments, the material required, the instrument itself and the government regulations on the subject. Each and every one of these subjects is dealt with fully and at length.

With this book in hand, anyone who can follow printed instructions can handle the complete organization and construction of a rural telephone company from start to finish. Notwithstanding its cost, the Northern Electric will send this book free—but only on request, and when the name of this magazine is mentioned. We would advise all of our readers who are in any degree interested in the subject of rural telephones to write for it.

Scouts

Not yet the lane of life is choked with man,
So many flowers of effort fall to seed.
The rear ranks crowd, but forward, in the van,
The scouts are scarce; of leaders there is need.

The scouts are scarce, and fields of grain and gold
The long procession passes dumbly by,
With feet that never stray from prints of old,
And voices silent to the outward cry.

The outward cry, that sounds the lead to hills
Dreamful of heavy harvests yet to be;
That slips the nimble water-hounds—the rills—
To track the fleets of commerce to the sea.

To track the fleets of commerce, and to lead
When thin the trail, and deep the dust and hot;
To break the bread in famine, and to feed
The mind till it beget the crumbs of thought.

Daily the bugles sound a rally call
To close the gaps before the battle-brunt—
Not with the routed ranks a-rear, but all
Who risk the world's audacities in front.

When ears are more than drums of senseless clay,
Deaf from the rupturing din of foolish things,
These bugle notes set flying bear away
The dust of old defeat upon their wings.

And up the trail, deep-trodden into dust,
Or trackless 'neath a garb of lusty grass,
The way is open to the Greater Trust
That knows each thorn and pitfall but to pass.

That knows each thorn and pitfall on the hill,
Nor fears the stumble or the tangle-pain—
But makes them serve the Trust and Greater Will
As beacons up the summit yet to gain.

The world will never crowd her sons to doom.
Were every man along the lane a weed,
Still would the roses seek a place to bloom,
And find a little spot to sow with seed.

So many flowers of fertile seedlings fall,
So many men forever fail as man,
The rose is ever scarce along the trail,
And men are needed forward in the van.

—*Aloysius Coll.*

Good-bye to 1910

By W. H. KELLY

Good-bye, Old-Year! I have no sad regret
That thou, a cog in the great wheel of God's eternity,
Has turned me on another space. And yet
I would not pass thee by without a backward look,
To shudder maybe or mayhap to smile
At the small part I played amid the actors in thy
book,
And judge by aid of conscience if my part
Has added to the welfare of the act just closed,
Or has my misconception of the art
Of living helped but to mar the plot.

Good-bye! Another rises, born like thee,
With song and cheer and peal of midnight bell,
As though with thee had died all wrong, and we
Had entered on a period heaven-sent,—filled with
prosperity.
Ah, Me! Long have I ceased to pray for better
times,
But rather that my time be better spent.



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A 4-YEAR OLD WAGNER APPLE TREE

The Fruit Magazine

VOL. II

FEBRUARY, 1911

No. 5

British Columbia Fruit-growers' Association Annual Convention

THE British Columbia Fruit-growers' Association held its twenty-first annual meeting at Victoria on January 6 and 7, 1911. The meeting was a very large and well-attended one and dealt with a number of questions intimately connected with the progress and development of the fruit-growing industry of the Province.

Practically all large shipping organizations and large shippers were represented, and men were present from every district of any fruit-growing importance.

Since the re-organization of this Association at the Kamloops meeting in April, 1910, its development has been rapid, and in accordance with the policy of promoting the affiliation of local fruit-shipping and educational organizations in fruit-growing a number of such bodies have affiliated. Those represented at Victoria, and their delegates, were as follows:—Hammond Fruit Union, F. D. Campbell; Hatzic Fruit-growers' Association, F. L. Ketcheson; Salmon Arm Farmers' Exchange, J. J. Barber; Okanagan Fruit Union, E. E. Samson; Kelowna Farmers' Exchange, B. McDonald; Summerland Fruit-growers' Association, G. J. C. White; Kaslo Fruit-growers' Association, W. Latham.

Representatives from the Grand Forks Fruit-growers' Association, Victoria Fruit-growers' Exchange, and the Kootenay Fruit Union were also in attendance.

Prairie fruit dealers were represented by S. J. Fhee, of Calgary, and Mr. Anderson, of Regina. In connection with the discussion on the standardization of box

sizes, the Michigan-Puget Sound Lumber Company, of Victoria, and the Brunette Sawmill Company, New Westminster, the two principal box shippers of the Province, had representatives present.

The C. P. R. Co. and the Dominion Express were represented by W. C. Bowles and R. Helme respectively.

All the directors of the Association at present in the province were present, including W. H. Hayward, Duncans; W. N. Shaw, Islands; J. C. Metcalfe, Hammond; W. J. Brandrith, Ladner; F. D. Nicholson, Salmon Arm; J. J. Armstrong, Keremeos; Jas. Rooke, Grand Forks; James Johnstone, Nelson; Thomas Abriel, Nakusp.

In addition to those mentioned above, there was a large attendance of local fruit-growers and representatives from upper country districts of the province.

Because of this large and representative attendance, the meeting might be characterized as one of the best-attended and strongest meetings ever held by the fruit-growers of British Columbia.

The address of the Premier, Mr. McBride, on the afternoon of Friday, the 6th, dealt at length with the general condition of the fruit industry in the province and the work of the Department of Agriculture being done to forward it. He alluded in complimentary terms to the success of the exhibitions in the Old Land, and indicated a progressive and broad policy on the part of the Provincial Government for the further encouragement of the industry.

The Secretary's report showed an increase in the membership over the province, from about 100 to 300, during the past year, and the report indicated in

general terms the amount of work done by the Association during the year. The financial statement showed that the Association is in a strong position.

The Association appointed as delegates to the Dominion Fruit Conference at Ottawa for next December, Mr. Thos. A. Brydon, of Victoria; Mr. Maxwell Smith, of Vancouver; Mr. R. H. Agur, of Summerland; and Mr. Thos. Abriel, of Nakusp—representing the four great districts of the province.

In the matter of transportation, a number of important points in connection with the improvement of both the freight and express service were taken up. Mr. Bowles and Mr. Helme were understood to promise continued improvement of the services rendered by both these, by their respective companies, and a resolution was passed by the Association directing the executive to appoint a strong transportation committee to follow up this work during the coming year.

The report of Mr. J. C. Metcalfe, Markets Commissioner, which was published in the January number of *The Fruit Magazine*, was presented for discussion. It dealt with the development of the Prairie markets for British Columbia fruit during the past year, and indicated in a general way the lines along which progress should be made by our fruit growers if this market is to be extended. Following Mr. Metcalfe's address, the members present took part in a discussion on the various features of the report, and a number of important points were dealt with specifically. Mr. Scott, of the Department of Agriculture, promised that the work of the Markets Commissioner would be amplified and extended during the present year, and the Association has undertaken to present Mr. Metcalfe's reports more quickly by letter, and to a certain extent by wire, to affiliated Associations and to members.

In the standardization of boxes and packages considerable progress was made. To facilitate discussion, the Secretary had provided types of the boxes under consideration, showing the need for increased standardization in pear, crab-apple, plum and peach packages.

The Association went on record unanimously favoring the use of the present apple box measuring 20x11x10 in. inside. This action was taken only after evidence had been given before the meeting by expert packers and all large shippers as to the alleged advantages of the shorter, deeper and wider Washington box.

Regarding the plum crate the Association by a vote recommended the use of the crate 4 $\frac{1}{4}$ in. deep by 15 $\frac{3}{4}$ by 15 $\frac{3}{4}$ in. inside. In connection with plums and prunes, a number of prominent shippers in the upper country told of the development of the American trade in prunes in the peach box. Mr. Samson, of the Okanagan Fruit Union, stated that good results had been secured in the shipment of plums in the peach box, four inches deep. This package is much cheaper, and the cost of packing is very much less than with the plum crate. The weight per box is about the same. Mr. Metcalfe stated that in order to meet competition it might perhaps be necessary for our upper country growers especially to adopt this box, though the Association did not go on record as favoring it or condemning it.

After an animated discussion, the Association passed a resolution favoring the peach box 11 $\frac{3}{4}$ inches wide. This was after a trial of the 11-inch box by several of the shippers, and this decision on this question is of importance to the whole of the peach shipping district. In the pear box the meeting favored the 11-inch wide inside, as this width has been found to carry the necessary weight, and has none of the disadvantages of the 11 $\frac{3}{4}$ -inch box in loading cars. Some shippers testified to using to advantage a pear box the same length and width as the apple box, but only eight inches deep.

A discussion on the proper package for crab-apples showed that the entire upper country was in favor of the pear box, while lower mainland and island shippers, as a whole, favored the use of the half-apple box. The use of the half-pear box on the island was suggested as a means of overcoming the undesirability of having boxes of two different types for this fruit, and it is hoped that

growers on the lower mainland and the island will give the half-pear box a good trial this year, although the half-apple box is much in favor.

On the labor question, the Secretary made a report on the results of his investigation, as directed by the Labor Committee, and the action of the Executive to date. A resolution was passed adopting the Executive's report, and another resolution was passed strongly advocating the encouragement of immigration from the British Isles for the purpose of ultimately securing enough labor for the fruit districts. The Secretary stated that in response to his inquiries, fruit-growers had asked for about 1,400 men for fruit districts for the coming year. The Labor Committee was directed to confer with the Provincial Government as soon as possible, to urge on them the necessity for action by the Government in this regard.

The Association will issue a report of the proceedings at an early date, giving in detail the discussion on all of these subjects and many others of importance which received consideration. The fruit-growers of the province generally should endeavor to secure this report at as early a date as possible, and thus become acquainted with the action of the convention more fully, so as to promote the standardization of our products, and therefore the ultimate success of the industry. The action of the Association with regard to transportation and markets deserves the attention also of every fruit-grower who has fruit to sell.

At a Directors' meeting, the following officers were elected for the coming year:

President, R. H. Agur, Summerland; Vice-president, W. C. Ricardo, Vernon; Secretary-treasurer, R. M. Winslow, Victoria; Auditor, Auditor-general.

Members of the Executive elected from the Directorate: R. M. Palmer, Kamloops; W. F. Somers, Gordon Head.

The Directors and their districts are as follows: 1, Victoria district, W. F. Somers, Gordon Head; 2, Duncans-Nanaimo district, T. A. Wood, Duncans; 3, Islands district, W. N. Shaw, Gabriola Island; north of the Fraser River district has been sub-divided—4, Mr. R. C.

Abbott representing the district of Mission Municipality and east of Mission; 5, Mr. J. C. Metcalfe the district north of the Fraser and west of Mission; 6, south of the Fraser River, A. Unsworth, Sardis; 7, Kamloops, R. M. Palmer, Kamloops; 8, Salmon Arm-Armstrong district, F. D. Nicholson, Salmon Arm; 9, Vernon district, W. C. Ricardo, Vernon; 10, Kelowna district, T. W. Stirling, Kelowna; 11, Westbank and Peachland, W. A. Lang, Peachland; 12, Summerland-Penticton district, R. H. Agur, Summerland; 13, Similkameen, J. J. Armstrong, Keremeos; 14, Arrow and Slocan Lake, Thos. Abriel, Nakusp; 15, Nelson district, J. Johnstone, Nelson; 16, Kaslo district, J. W. Cockle, Kaslo; 17, Boundary district, Jas. Rooke, Grand Forks; 18, Creston and East Kootenay, James Compton, Creston.

The membership fee for the year 1911 is \$1.00. Fruit-growers of the province are invited to become members and receive not only the full annual report, but market and crop reports, and all other advantages offered by the Association. Communications should be sent to R. M. Winslow, Secretary, Victoria.

The Fruit Magazine was again made the official organ of the Association, but must be paid for in addition to the membership fee of \$1.00. The cost of producing this high-class magazine is now so great that it is quite impossible for the publishers to allow any rebate from the regular subscription price of \$1.00 a year.

A most pleasing incident and one in which everybody joined in the spirit was the presentation by the Deputy Minister of Agriculture, on behalf of the Association, of a handsome gold-headed cane to Mr. W. J. Brandrith, of Ladner, B. C. Mr. Brandrith was for many years the faithful Secretary of the Association in days when fruit-growing in British Columbia did not interest the general public as it does today.

The following are some of the principal resolutions adopted:

"That this British Columbia Fruit-growers' Association adopt as a standard apple box for all purposes the box 10x11x20 inches, and that we instruct

our delegates to Ottawa to use every endeavor in their power to have the words '*for export only*' expurgated from the Canadian Fruit Marks Act, Section 325."—Carried.

"That the present pear box, $18\frac{1}{4} \times 11 \times 8\frac{1}{2}$, be the legal size."—Carried.

Moved by Mr. Pitcairn, seconded by Jas. Rooke, "That the Association recommend that the four-basket plum crate be $15\frac{3}{4} \times 15\frac{3}{4} \times 4\frac{1}{4}$ inside."—Carried.

"That the peach crate be $18\frac{1}{4} \times 11\frac{3}{4} \times 4\frac{1}{2}$."—Carried.

"That we, the Fruit-growers' Association in annual convention assembled, do hereby express our appreciation of the Department of Agriculture in furthering the interests of the fruit industry of British Columbia, especially with reference to the marketing of fruit, and the publicity campaign in connection with the exhibitions in Eastern Canada and Great Britain."—Carried.

"That the pear box $8\frac{1}{2} \times 11 \times 18\frac{1}{4}$ be adopted by this Association as a standard box for crab-apples."—Carried.

"Whereas the farmers of the Northwest are asking that the duty on American fruit be reduced, and whereas the fruit industry of British Columbia is attaining very large proportions and would suffer severely in such case, be it therefore resolved, that this representative meeting of British Columbia fruit-growers wish it placed on record that they are absolutely against any reduction of duty, and that the duties on fruit into Canada be raised to equal the duty imposed by the United States on fruit going from Canada into the United States, and

"Be it further resolved, that copies of this resolution be forwarded to the Dominion and Provincial Governments, and members of both Houses, and that all affiliated Associations be notified of this action."—Carried.

"That the Executive appoint any necessary alternates to the Dominion Conference."—Carried.

"Whereas the Association recognizes the need of packing-schools in the province, Resolved that we recommend very strongly to the Department of Agriculture that every effort be made to supply

packing-schools to all the districts making application."—Carried.

"That this meeting of the British Columbia Fruit-growers' Association wishes to place on record its deep regret at the loss the Association has sustained by the tragic death of the late Capt. P. Elliston, and that a letter of condolence be forwarded to his family, giving expression to same."—Carried.

"That this Association desires to tender a hearty vote of thanks to, and to express its appreciation of the services rendered to the fruit-growing industry of the province by Mr. Maxwell Smith in organizing and carrying to a successful issue the First Canadian National Apple Show, held in Vancouver, November 1 to 5, 1910, which proved to be the best apple show the world has ever seen, and demonstrated to the world at large the claims of our province as the leading apple country of the world."—Carried.

"That realizing the benefits obtained from the investigation of the conditions in Washington, Oregon and Idaho during the past season, Resolved, that it is the sense of this meeting that the Provincial Government should continue such investigation in the coming season more intensively, and we would recommend that a man be employed and kept in those districts throughout the shipping season, to keep the shippers in British Columbia advised of prices being quoted and crop conditions from time to time."—Carried.

"That copies of the resolution on tariff on fruit be sent to the various Boards of Trade in British Columbia, and also to the Provincial Fruit-growers' Association of Canada, and that these bodies be asked to endorse the resolution."—Carried.

"That we recommend that the Provincial Government be asked to promote immigration from the British Isles, and that in order to encourage such immigration a Labor Bureau be established, and that steps be taken to establish receiving farms where such immigrants may be able to get employment and experience pending their engagement by ranchers and farmers; also that assisted passages be granted."—Carried.

Practical Management of Orchard Lands

By PROFESSOR W. S. THORNER
PULLMAN, WASH.

PROBABLY no phase of agriculture has been more widely discussed during the past five years, and yet I feel there is much to learn, especially of interest to planters and growers in the Pacific Northwest.

I would not have you feel that I criticize our general methods of culture, and yet I want our fruit men to meet the problem face to face now, rather than that our sons and daughters in 50 years from now should find it necessary to abandon the old orchard and the farm home, like thousands of our eastern friends, because the fertility of the soil has been needlessly and wantonly wasted.

The thought of conservation is just now rife everywhere. We hear of conserving our coal fields, our timber lands and our water rights, but rarely do we hear earnest, strong pleas for the preservation of the fertility of our farm and orchard lands, and yet through these sources greater losses are taking place annually and every year than we have ever known through forest fires and the timbermen's axe and saw. One loss we see and feel now, the other we do not see because it quietly takes its way to the Pacific and its absence will be best measured in fifty or sixty years from now by comparing the size, color and quality of our orchard fruits as well as our grain crops with those we are now harvesting.

No agriculture is practical that leaves the soil poorer each year, and this is where we go down in agriculture before our European brothers. After farming lands for hundreds of years their farm land is richer than when they first started, while ours gradually but surely grows poorer, and instead of building up we forsake in search of new virgin soil to again go through the same routine. Some orchards here in the West while not yet twenty years old are already showing

marked evidences of this phase, and unless we change from an ordinary or theoretical agriculture to a practical or special one you and I may live long enough to see a large percentage of these now fine valuable productive orchards only remnants of their former selves.

The eastern grower has solved the problem over and over again, and yet like any problem that is influenced by soil and environmental conditions, it is constantly coming up for reconsideration. Twenty years ago it was the almost universal opinion of the eastern fruit-grower that the orchard did about as well without tillage on his soil as it did with such tillage as he would give it, and if such was the case, what was the use of cultivating so long as there were no weeds to prick his conscience. Today many are considering the merits and demerits of the and not a few are being won over to a rational method of tillage.

If there are seven stages or periods in orchard work, as there are in most other things, and the seventh period is a period of rest, then many of the eastern fellows are in it and some of our western growers are looking for it.

The Pacific Northwest is now closing its first decade of orchard work, and with the close of this decade we see evidence of decay in practice if not in truth. Some of our growers are approaching the shadow of doubt of good cultivation, and others are already in it, and so for this reason, if no other, I desire to commend a firm stand and caution against vagaries and fads.

The past season with its long periods of dry weather has been one of the most trying to the cultivator, and at the same time one of the most interesting to the student of horticulture that

the west has ever experienced. The winter broke early and left the soil saturated with moisture. Unusually heavy spring rains came, packing the soil to brick hardness, badly washing it in many places and seriously gulling it in others. These rains were followed by drying winds and baking suns, and these in turn by an almost absolutely dry summer. Soils that were not properly handled became strikingly sterile, orchards that were well and properly tilled produced remarkable crops of high-colored, good-quality fruits. It was a season where skill and science told to the extreme, while brute strength availed but little.

I classify methods of orchard tillage into three distinct groups or classes. My classification is based entirely upon the manner of handling the soil and shows at once a practical grouping of practically all of our growers as well as their orchards into these classes:

1. Grass, clover, weeds or alfalfa mulch.
2. Absolutely clean tillage.
3. Early thorough tillage followed with cover crops.

In this grouping I recognize that soil conditions, methods of the planting or certain past tenures of the orchard may influence one or the other, but will willingly let each answer for itself.

The grass, clover, weed or alfalfa mulch system is a relic of primitive horticulture handed down to us like many other relics, to be taken as it was without investigation into merits, causes or wherefores.

It is an outgrowth of neglect rather than a development of thought and comes through such reasoning as this: If Oregon fir and Washington pine have grown to such size on these lands without culture, why shouldn't fruit trees do the same? The differences are that nature takes hundreds of years and millions of trees to produce a few big trees, while man takes a few years and a handful of small switches to develop an orchard. We cannot afford to pattern after nature, but must assist her by conserving moisture, making plant food available and removing the offenders, whether they be weeds or other trees.

Everyone who has studied the problem recognizes that the grass mulch system has merits for certain conditions, and while it is occasionally good, is a much abused practice. This abuse in our state shows most strongly on the west side of the Cascades, but is not wholly lacking on the east. Under various conditions the grass mulch system takes on varied modifications.

Some growers permit weeds and grass to grow at will in the orchard all summer long only to be marked down in spring with harrow, light disk and clod masher. The only remarkable feature about these orchards is that some of them are giving fair returns. The probable reasons for the returns are that available plant food and moisture are only secondary considerations in these soils. On other soils, as I shall show later, it would be an absolute failure.

Another group of growers permit this mulch to grow until mid-summer, when it is mowed down and placed around the trees to act as a mulch in the true sense to conserve moisture, ameliorate the soil and add plant food. The grass mulch system as practised in this manner on rich, deep, moist soil will prove a success in orchard work, providing the trees are fairly well established before the system is put into operation. Remember again, however, that the moisture problem is taken care of by plenty of rain or frequent irrigation.

A third group of growers cut the mulch and use it for hay, or worse still, pasture the orchard without practising fertilizer returns. A friend of mine recently sold four tons of alfalfa hay, \$1,200 worth of apples, pastured a cow and 50 chickens for three months this fall on and from one acre of orchard. He said that the soil was the richest he ever saw.

CLOVER VERSUS ALFALFA MULCH

Considerable discussion has arisen lately relative to the comparative merits and demerits of the two plants, alfalfa and clover, that are most commonly used as grass mulch plants here in the west. Each has a strong following from our best fruit-growers and consequently must

have merits of note under favorable conditions.

Those championing clover attribute the following advantages to its growth:

1. Being a comparatively shallow-rooted plant, its roots do not feed in the same plane as the roots of bearing trees.

2. It adds more fiber and plant food to the first eighteen inches of the soil.

3. That it is an easy plant as compared with alfalfa to destroy when the time comes to remove the mulch.

While those championing the use of alfalfa contend that it is best because it has the following characteristics:

1. Being a naturally deep-rooted plant it goes below the apple tree root plane.

2. While it adds a small amount of fiber, its roots work deep into the soil and thereby extend the feeding area, especially in hard, impenetrable soil.

3. It is a greater tonnage producer under irrigation than the clover.

My own personal experiences, while confined to a few fields, have been very much in favor of clover so far as removing the mulch and tree growth was concerned, but favorable to alfalfa as far as tonnage and subdividing and preparing the soil for orchard purposes. I would not seed alfalfa or clover for that matter, if I seeded at all, closer than four feet from the young tree, and then preserve thorough tillage between the alfalfa and the trees. As the trees grow older I should extend the cultivatable area from one to two feet each year, until the whole was receiving clean tillage.

MULCH LESSONS FROM THE SEASON OF 1910

Between April 15 and September 15 we had less than one-half inch of rainfall in Eastern Washington. The weather otherwise, while dry, was not seriously hot, and very few strong winds. In the grass mulch experiments we had a great number of the more common varieties of apples. But inasmuch as the Ben Davis is probably better known than any other variety I desire to use it as the illustrating example. Kindly remember that the soil was uniform and that no irrigation was used.

Plot 1—Old alfalfa plot, 14-year-old trees, fruit one inch in diameter, poorly colored and badly wilted in harvesting time.

Plot 2—Ben Davis variety, but in grass and weed plot; fruit one and one-half inches in diameter, of fair color, but poorly developed; not wilted.

Plot 3—Ben Davis variety, old clover field, trees 14 to 15 years of age, fruits two inches in diameter, well colored, fairly good texture and fair crop, only small.

Plot 4—Ben Davis, 11-year-old trees, given first-class care, clean tillage, fruit three and one-half tier, well colored and good texture. As good a crop as one could desire.

While this little experiment proves much for Eastern Washington it does not settle the problem for other parts of the Northwest, yet it does show that where summer moisture is the main factor, we must practise almost, if not entirely, nothing less than clean culture.

After visiting hundreds of orchards last year in Western Washington during the dry season, I am convinced that our problems of fruit culture are identical so far as cultivation is concerned, and yet there are conditions under which it is advisable to use a grass mulch of some sort or other, and I would enumerate as possible conditions the following:

1. Where the soil is so rich as to cause the trees to produce wood at the expense of the fruit. Pears, cherries.

2. Where the soil is too wet at a season of the year that the mulch will quickly take up the surplus moisture.

3. In loose, shifting soils that must be held down to prevent blowing.

4. On rocky soil that can't be cultivated any way.

5. And finally, when the owner is too lazy to cultivate and wants a feasible reason for not doing so.

ABSOLUTELY CLEAN TILLAGE

This is the direct reaction of no tillage, and comes, as all reforms do, at the swing of the pendulum to the opposite pole. It is very valuable in certain soils where everything is sacrificed for moisture, but

(Continued on Page 350.)

Editorial

A True Friend

is the person who first comes in after all the rest of the world has gone out

* * *

SECOND CANADIAN NATIONAL APPLE SHOW

THE great educational and publicity value resulting from the First Canadian National Apple Show exceeds the cost in time and money expended a hundredfold and fully justifies the claim that it should be continued annually at some point within the fruit-growing provinces of the Dominion.

Nova Scotia has intimated that she is hardly prepared to undertake her full share of the task of holding the show in St. John or Halifax this year, but will do her part a year or two later. It is therefore up to Ontario or Quebec to take care of the show next fall, and whichever city expects to undertake the enterprise should be bestirring itself if the second show is to be anything like as large or as good as the first. An exhibition of that kind cannot be hurried together in a few months and bring the same results that a long and persistent campaign of preparation will. If the eastern cities were alive to their best interests they would simply be falling over each other to secure the Second Canadian National Apple Show; but doubtless some of them will wake up to the fact that a great opportunity has passed them by unnoticed and unimproved. The fact that a Dominion conference of fruit-growers is to be again held in Ottawa next December would indicate that the National Apple Show should be held about the same time in Toronto, Montreal or Ottawa. The first show, held at Vancouver, B. C., the first week of November last year, was just a little too early for the apple grower, and in future the show should be held about the last week of November or the first week of December.

The time, the city and the man for the Second Canadian National Apple Show

are questions which should be answered soon.

* * *

AGRICULTURE AND THE PUBLIC SCHOOL

IN the days of the late Dr. Ryerson, of Toronto, the public schools of Ontario were raised to a degree of efficiency which placed them in the forefront of the common school systems of the world at that time, and ever since the progressive development of educational facilities all over Canada has gone steadily on until today we stand second to none. The one thing greatly to be desired—if we may digress for a moment from the subject immediately under consideration—is the adoption of a uniform course of study in the public schools all over the Dominion. There is no good reason why the standards should not be the same in all the provinces, and pupils or teachers should not be handicapped when removing to new fields of labor within our national boundaries.

The public school should be a nursery in which the future citizen is trained and fitted for any sphere of life in which the vagaries of fortune, design or circumstances may place him, and not an institution in which to prejudice and contaminate the mind of the child with ambitions and the pursuit of occupations agreeable to the incapable judgment of teachers, parents or guardians. Life in this world is one continual evolutionary change, and we have no right to prejudice the mind and jeopardise the child's future by launching his ship on the sea of life with the burden of a listed cargo of knowledge thrust upon him in the receptive years of his public school life. We contend that the public school curricula all over Canada are not well balanced and not calculated to give the boy or girl a fair chance of making a wise choice or an equal success in any field which the future may hold in store. This is particularly true with respect to the subject of agriculture, which does not occupy its proper place in the curriculum

of the public school of any province in Canada. Although our public school systems may compare very favorably with those of other countries, yet they are not what they should be in the light of our opportunities, needs and conditions. We are justly proud of our educational institutions in British Columbia and the efficiency of our teachers and professors, but we find the Council of Public Instruction in their "list of authorized text books for public schools" recommending *The Country Readers*, Books I, II and III, edited by H. B. M. Buchanan, published by McMillan & Co., for supplementary reading in districts where farming is the chief occupation. Farming, in one form or another, is the chief occupation of the people of Canada, and there are as many children born with sufficient intelligence for the pursuit of agriculture in cities, fishing hamlets, mining and lumber camps as there are born on farms who are fit to become merchants, doctors, teachers, lawyers, preachers, politicians and statesmen. And what right has the Council of Public Instruction to presume that children reared in districts where farming is the chief occupation will remain there, when the whole trend of our public school system is to unfit young people for the intelligent and profitable pursuit of agriculture and entice them away from agricultural thought and work to augment the already congested ranks of poor preachers, lawyers, doctors, clerks and the armies of unemployed nobodies in the cities? And why should the child who has the misfortune to be born and attend school in a city be debarred from supplementary reading on the subject of agriculture? The prospective agriculturist should be given the same opportunity in the public school as the prospective professional or business man, and the curriculum and standard for teachers should be the same in the rural as the city community. Only by making the science of agriculture one of the chief studies in the public school can the flow of our best brain and brawn to the cities be reversed and the backbone of the country stiffened without injustice to any class.

A proper opportunity for the study of

the laws of nature in his youth might have saved many a struggling solicitor from worrying about his laundry bills in the city. The study of the anatomy and physiology of plant life should be of more value to the medical student than Greek, Latin, French and German are to the budding agriculturist, and the theologian would be better qualified to grapple with the mysteries of spiritual realms if he had a more favorable opportunity of becoming familiar with the marvels of God's laws in the natural world.

We are not dealing with the higher institutions of learning at present, which may be designed to fit men and women for special work, but with the free school which is supported by the public and which should be of equal advantage to all classes. We contend that no teacher should be qualified to teach in a public school in Canada who is not well grounded in the basic science upon which rests the superstructure of all our national wealth, and no Council of Public Instruction has any moral right to enforce the use of a curriculum which is not fair to the child of any citizen in the land. Why should we be forced to establish technical and other schools, not only to do the work which should have been done in the public school, but to rectify the mischief done there by the child's mind being misdirected at an age when it was most susceptible to influence?

Dr. James W. Robertson, one of Canada's brightest minds, has said: "With all our getting and our growing, it behooves us to give the children of the country the best possible start in life towards making the most of themselves in the various walks of life in the country. If our civilization should confer that upon them as their birthright, it would be in every sense a blessing, greater by far than any inheritance of natural or developed resources belonging to the nation. The appalling waste of child-time in thousands of our rural schools is little less than a crime against humanity."

Knowing this, we venture to suggest that Professor Robertson's valuable time might be better occupied in leading a movement for the reform of the public

school curriculum and the proper instruction of teachers than in establishing technical schools, rendered necessary largely through the defects of our present public school systems.

As we have said on a former occasion, co-operation is not only the fundamental principle which underlies all human progress and which measures the strength and stability of any specific industry, but it is likewise that vital element which courses through every root, fibre and branch of all higher forms of civilization. Therefore it is expedient that there should be mutual consideration and co-operative action between the city and rural population to make the science of agriculture one of the chief subjects of the public school curriculum. Then our youth should not be lured by a superabundance of classical, ethical and literary education as compared with agricultural, from the natural pursuit of mankind in cultivating the soil to the artificial life of the cities.

Undoubtedly one of the dangers that threaten the future well-being of this country, as well as some others, is the abnormal growth of cities at the expense of the rural communities. By giving agriculture its proper place in the public school curriculum much will be done to preserve the equilibrium between the population of the cities and the rural districts, which is at once a guarantee of the strength and stability of any nation.

We have here a country of untold natural wealth and possibilities, and let us make it a great nation by doing our duty and earning the blessing of those who inherit it after us by making our public school system more practical than theoretical.

The early Spanish adventurers who visited our Atlantic Coast in an unrewarded search for gold cried "Aca Nada" (here is nothing), from which the name Canada was derived, and went away leaving the wealth of this great country to others:

Still let it stand,

The one-time jest, the old ironic name,
To mock the flippant soul and braggart band,

Who empty went because they empty came!

"Here there is naught!"

And yet from waiting plain and pregnant hills

She yielded well to them who wisely sought,

And still o'er land and sea her treasure spills!

Yet naught was here!—

And far they journeyed to some gilded slope,

Left disembowelled this many a barren year—

Torn hill, and ravaged mine, and wasted hope!

So, still it stands,

The mocking phrase, the old and foolish jest—

Oh, golden Canada, of all God's lands,

The one most bountiful, and wide, and best!

Let no young man abandon agriculture believing that there is more health, wealth or happiness in any other calling, but bring education, culture, conveniences, pleasures and refinement to the farm, and man will be enabled to fulfil the destiny for which he was created and live nearer to Nature's God than anywhere else

* * *

PROSECUTIONS.

At the Victoria Police Court on Tuesday, January 17, before Magistrate Jay, Ed. Plowright, fruit-grower, Strawberry Vale, and Fred Saul, fruit-grower, city, were, on information laid by Dominion Fruit Inspector D. M. Robertson, each fined \$10.00 and costs, or in default one month's imprisonment, for violation of the Inspection and Sales Act in not having their boxes of fruit properly marked in a plain and indelible manner, in letters not less than half an inch in length, with their full names and addresses, the variety of fruit, and the grade. Mr. W. H. Langley appeared for the prosecution. Copies of the Act explaining how the boxes must be marked, and defining the various grades can be had on application from D. M. Robertson, 237 Sixth street, New Westminster, B. C.

Plant a Tree

In this inhuman rush for wealth,
When you rise or fall, as by stealth
Should you wish to regain your health,
Plant a tree!

Would you divert a brewing thought—
Mindladen and with danger fraught?
Take this advice—it should be sought—
Plant a tree!

Your life may be a hundred years,
Crowned with success, or draped in tears;
Would you desire to scatter fears?
Plant a tree!

Would you one deed perpetuate,
Untold years from this very date,
To adorn the earth? Do not wait—
Plant a tree!

A benefactor to mankind;
Mem'ries as sweet to thy name entwin'd—
Select the best there is to find—
Plant a tree!

Earth responds quickly to thy deed,
Posterity will bestow heed,
Bound agnostic thoughts will be freed—
Plant a tree!

Do good by stealth—and find it fame,
Aye, weary souls will bless thy name,
Generations will do the same—
Plant a tree!

Blessings will return manifold—
Protect the sparrow from the cold,
To the traveller be a fold—
Plant a tree!

Hungry pilgrims it will feed;
To the thirsty 'twill be a mead.
Do it now; let this be your creed;
Plant a tree!

A landmark stands, and all may see,
By the planting of just a tree—
Growing on till eternity—
Plant a tree!

—Robert S. Walker

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

FIVE dollars and a half per bushel for apples ought to leave a good margin of profit for the growers. When the price of good winter apples rises to thirty and fifty cents a gallon here in Ottawa, as it did before Christmas, the average housekeeper seems to think the end of the world is at hand. The price first quoted above was paid at Shanghai in November for a consignment received from Messrs. Stirling & Pitcairn, of Kelowna, British Columbia, and is reported by Mr. John B. Jackson, Canadian Trade Commissioner at Shanghai, who, in his last official communication to the Department of Trade and Commerce, described the consignment as deserving more than a passing notice, not only on account of the excellence of the fruit, but for the "admirable character of the packing." The shipment consisted of some five hundred boxes, each box containing about forty pounds of fruit. The apples were of two varieties—Spitzenbergs and Newton Pippins—beautifully sound, well flavored and in the very pink of condition. The apples had been carefully picked and selected. Each apple was separately rolled in thin tissue paper. The boxes were neat and well stencilled, and the fruit was further protected by corrugated paper inside each box.

These apples sold readily wholesale at tals 6 (\$3.70 gold) per box or something like \$5.50 gold per bushel. Mr. Jackson adds: "At this season of the year it is impossible to get fresh apples in China, except from the United States or Canada. Prices rule high, the retail price being from 30 to 35 cents Mex. per pound. It is reported here that in Harbin and the Manchurian towns fresh apples are bringing that amount each. Australian apples do not begin to arrive until after January. British Columbia fruit-growers," Mr. Jackson says, "would do well to keep this market in view for next season"—in which most readers of *The Fruit Magazine* will readily concur.

The high price paid for the shipment from Kelowna to China serves to illustrate the importance, not only of careful selection, packing and handling, but of growing the right kinds of apples. Apropos of this, I note an editorial paragraph in the "Toronto News" in which the farmers of Ontario are admonished that those who grow inferior apples, instead of fruit of the highest class, neglect a most important source of profit. Ontario dealers in choice apples this year, declares the "News," cannot begin to meet the demand for shipment to the Old Country, a statement that coincides with correspondence from cautious and conservative authorities in the United Kingdom. Many people in Toronto, Ottawa and other centres of population throughout Canada, who wished to send presents of boxes or barrels of high-grade Northern Spies to their friends in England this winter, and were not forehanded enough in placing their orders, were disappointed and unable to procure what they wanted, except at exorbitant and previously unheard-of prices. It costs the grower very little more to buy, plant, grow and market the best grades than the worst, yet there is nothing more common than to see farmers bringing load after load of exclusively inferior fruit to town, when, if they had made the proper selection of trees at first for the planting, they could just as easily now be supplying the best. People turn away by the score from poor qualities without buying, and sellers find themselves forced to part with their inferior apples, at last, for a third of what is freely paid for high-graded fruit. Scores of farmers, year after year, leave the low-grade fruit to rot on the ground, rather than be at the trouble of taking it to market.

An official report has been received from William Hutchison, Exhibition Commissioner for Canada, respecting 150 boxes of Fameuse and McIntosh Red apples sent to him at Brussels by direction of the Minister of Agriculture.

These apples were packed in boxes with corrugated strawboard between the layers, each apple carefully wrapped in two papers. They were distributed to people of note in Brussels, and Mr. Hutchison says that he has received very complimentary testimonials as to the quality of the apples. He has had interviews with many people who want to know if it would be possible to have apples of similar quality shipped into Brussels, and who state that "they never tasted anything like the Fameuse or the McIntosh Red." The fruit section of the Canadian exhibit at Brussels last summer attracted much attention and seems to have made a most excellent impression, and any well-colored, good-looking apples now offered for sale in Brussels are called "Canadian." This may not in itself be an advantage, but it is a good indication of the opening which has been created for choice Canadian dessert apples. A large collection of Canadian apples will be sent to the Festival of Empire to be held in London next summer.

At the last meeting of the Niagara District Fruit-growers' Association, the principal business for discussion was the United States tariff against Canadian fruits and the little peach pest. The following resolution was unanimously passed: "Whereas the United States tariff against Canadian products is in the aggregate greatly in excess, resulting in some cases to the detriment of Canadian growers, and the Canadian tariff has proved unsatisfactory to the fruit industry in Canada, therefore it is the opinion of this association that any reciprocity treaty with the United States be seriously considered and only entered into after consultation with officials representing the fruit industries, and that in the final adjustment of any tariff with the United States all possible preference should be given to the Mother-country."

Provincial Inspector Lewis and Inspectors David Smith, G. Burkholder, Pattison and others spoke on the little peach pest. The disease is just beginning to show itself in the province of Ontario and is very dangerous. It is a good deal similar to the yellow peach pest. Mr. Lewis told of one orchard near Fonthill where, of seventeen hundred trees, four-

teen hundred will have to be cut out. Liverpool reports of apple receipts show that the quantity received last month was not in excess of requirements and an increase could have been readily disposed of without affecting quotations. The supplies were mostly Maine fruit, with some other shipments through the port of Boston, for which there was an active enquiry. The few Canadian consignments were in strong demand. Baldwins, firsts, were quoted at 22s 6d to 23s, and Russets up to 30s; Kings, firsts, ranged all the way from 22s 6d to 28s, and seconds, 21s; Spies, firsts, 23s 6d, and seconds, 18s; Wagners, firsts, 22s 6d; Greenings, firsts, 19s 3d to 24s, and seconds, 18s.

Mr. J. T. Lithgow, Canadian Trade Commissioner at Glasgow, reports that complaints respecting inferior Canadian apples have been made by Aberdeen and Dundee merchants. Two or three barrels were opened in the presence of the commissioner and were found to be "anything but creditable to the packers." Mr. Lithgow also refers to the first arrivals at Glasgow of British Columbia apples this season by direct shipment. He says the Scottish-Canadian Land and Fruit Company, a Glasgow enterprise, has considerable land under cultivation near Vernon, B. C., and their fruit is being handled at Glasgow by one of the largest concerns and meeting with ready sale. The Okanagan Fruit Company sent a fair-sized shipment which was well packed and boxed. This lot was handled by a firm not connected with the apple market, consequently it did not appear in competition with the product of other places. The Jonathan sold retail at 14s per box, which was considered a very good price, and other varieties also obtained top figures.

Mr. W. A. Beddoe, Canadian Trade Commissioner in New Zealand, has transmitted to the Department of Trade and Commerce here a list of fruit importations into New Zealand during the past year. Examination of the statement, he says, shows that large shipments of apples came from the United States west coast—a much smaller quantity from the United States east coast. There exists, undoubtedly, a very large market in New

Zealand for fresh fruits. The seasons lend themselves to this condition. When it is winter in New Zealand it is summer in Canada. During the period of fruit shipments from Canada, New Zealand is short of fruit, and vice versa. Most of the fruit reaches New Zealand via the San Francisco boats without transshipment.

A valuable compilation respecting South Africa trade, including fruit, has been received here from Mr. H. R. Pousette, Canadian Trade Commissioner at Durban. Mr. Pousette reports that the trade in fresh fruit, in so far as Canada is concerned, is limited to apples, which can only arrive during three months, viz., October, November and December. But at that particular season when the market is almost bare, they are most opportune. Last year's trade, whilst an improvement on that of 1908, is still very far below that of 1906, although that year may have been unduly high. Shortly after the New Year the local fruit, such as apricots and peaches, crowds out the imported. Canadian apples, except for one or two exceptions, arrived in splendid condition last year, which fact should give dealers more confidence for the coming season. Dealers have been made aware of the strict supervision exercised by the Dominion government over fruit exporters and the names of those Canadian shippers who were convicted of fraudulent practice last year were published in the Bulletin of the Agricultural Department and circulated from the Commissioner's office amongst the dealers, and this should also create a favorable impression as to the efforts of the Canadian government in this branch of export trade. Whilst the trade in dried fruits is not likely to be large, owing to the competition of the domestic product, it should admit of some dried apples coming in from the Dominion. It is not probable that South African apples will ever be sold to any extent, except in a fresh state, or at least not for many years. The United States is the largest exporter of dried fruits to South Africa. The trade in bottled and tinned fruits has fallen off, owing chiefly to competition by local

factories. At the same time there is no reason why Canada should not export £3,000 or £4,000 worth. Canadian fruits can compare most favorably with United States brands in quality, but the latter are much more attractively put up, and are more pleasing to the eye when served. At present a brand of California fruit has the highest reputation in the South African market, owing to its choice flavor and fine appearance. On taste alone the Canadian article, however, surpasses the Californian, consequently it is only because the former is not so well canned or so aggressively pushed that it has to be content with a secondary place.

A reference of great interest to Canadian peach growers relating to mildew on peaches was made in a recent report to the Department of Trade and Commerce by Mr. W. A. MacKinnon, Canadian Trade Commissioner at Birmingham, England, but reached Ottawa too late to be included in my letter for the December issue of *The Fruit Magazine*. Mr. MacKinnon writes that a Derby consignee of Canadian peaches, grown in the Niagara district, and shipped from Burlington, has pointed out that those which were opened and displayed immediately on arrival kept much better than those which were kept tight in their cases for a few days longer while the first lot was being retailed off. Among the peaches which had been left unopened were found a number with large patches of decay, and one or two which were entirely gone, that is to say the whole of the skin had turned black or dark grey, and the peach looked as if rotten throughout, though the flesh was still fairly firm to the touch and the skin unbroken. In order to ascertain, if possible, the nature of the disease, and whether it was likely to be discovered at the time of shipment, several specimens were sent to the Central Experimental Farm at Ottawa, where they were examined by Mr. H. T. Gussow, F.R.M.S., Dominion botanist. A copy of Mr. Gussow's report, which appears below, has been forwarded to the shippers, and its contents should be carefully observed by those supplying peaches to any distant market. The report is as

follows: "I have examined the peaches and find that they show patches of 'Peach Mildew' (*Sphoerthea pannosa*), which is a common disease on peaches and roses. In my opinion, peaches showing this or any other injury should never be shipped, as the condition of the peaches would not only prejudice their sale, but they are also liable to completely rot in transit, and thus become valueless for the market. Peaches which show mildew spots cannot be treated. The treatment must take place earlier. Thorough dusting with flowers of sulphur every ten days has been found sufficient. This treatment should be started immediately after any signs of mildew appear on the leaves, and it should be strictly continued so that the fruits which are forming are not also attacked."

Mr. E. D. Arnaud, Canadian Trade Commissioner at Bristol, England, reports as follows in the Trade and Commerce Weekly of the 9th ult.: "Some fine specimens of Nova Scotia fruit have recently been on exhibition by the Canadian Pacific Railway, and have attracted considerable attention and favorable comment. A small consignment of apples from Nova Scotia, consisting of 32 barrels, reached Bristol by the Royal Edward, C. N. R., and was sold yester-

day when the following prices were realized:—

"No. 1 G. Russet, 2 barrels, 23s 0d, small but good; No. 1 N. Russet, 1 barrel, 23s 0d, small but good; No. 1 Greening, 1 barrel, 17s 6d, small but good; No. 1 Seek, 2 barrels, 17s 6d, small but good; No. 2 Seek, 1 barrel, 17s 6d, very small; No. 1, No. 2 Vandevere, 1 barrel, 17s 6d, good; No. 3 Baldwin, 2 barrels, 20s 0d, good color, small; No. 3 Northern Spy, 6 barrels, 17s 6d, small, poor; No. 3 Northern Spy, 2 barrels, 15s 0d, very poor; No. 1 G. Russet, 1 barrel, 23s 0d, very fair; No. 2 G. Russet, 2 barrels, 23s 0d, very fair; No. 1 Greening, 2 barrels, 15s 6d, fair; No. 1 Seek, 1 barrel, 15s 6d, fair, 1 barrel slack; No. 2 Seek, 2 barrels, 15s 6d, poor; No. 3 Northern Spy, 2 barrels, 15s 6d, fair; No. 1 Vandevere, 1 barrel, 15s 6d, good; No. 3 Vandevere, 1 barrel, 15s 6d, good, small; No. 3 Spy, 1 barrel, 16s 6d, poor.

The following prices are quoted at present by a leading local firm of fruit salesmen for Canadian apples wholesale:

		No. 1	No. 2
Baldwins No. 1	per barrel	26s. 0d.	23s. 6d.
Ben Davis	"	23s. 6d.	21s.
Kings	"	26s. 6d.	24s.
Blenheims	"	27s.	24s.
Golden Russets	"	29s.	25s.
Wagners	choice per box	8s. 6d.	
Kings	"	8s. 6d.	
Spies	"	9s. 6d.	
Baldwins	"	8s. 6d.	

A LITTLE THING.

You only said, "I love you!"
But the words became a song,
My heart repeated o'er and o'er,
And the day was not so long.

You gave me a kiss at parting;
But its perfume stayed all day,
And made my lot the sweeter
As I journeyed on my way.

You only said, "I'm sorry
For the angry word I said,"
But my heart forgot its sorrow
And gladness reigned instead.

—Mabel Wilfong Brewer.

Lead Arsenates

In Combination with Lime-sulphur

By PROF. C. E. BRADLEY

ON account of the powerful toxic action exhibited by arsenic and its compounds this element has served for many years as the basis of various products designed to exterminate insect and animal pests. History even records an interesting experiment wherein an organization of young wives of Rome, about the middle of the 17th century, succeeded in disposing of a number of undesirable husbands by means of a secret arsenical preparation—a trick which is still worked occasionally in modern times.

Arsenic occurs naturally in a variety of forms and is recovered from its ores at several places in this country, particularly at Everett, Wash., and Anaconda, Mont. Its chief natural compounds are arsenopyrite, a mineral consisting of sulphides of iron and arsenic and realgar and orpiment di and tri-sulphides of arsenic respectively. From these minerals the tri-oxide or white arsenic of commerce is prepared. Chemical methods for determining arsenic are very exact and sensitive, and it has been detected in minute quantities in mineral waters, sea water, soils, in the ash of many plants and in the tissues of the human body. The great English chemist, Sir Humphry Davy, found arsenic in the ash of a turnip which had been fertilized with a phosphate which had in turn been prepared with sulphuric acid that contained arsenic. In more recent years a remarkable incident in this connection was the detection in English beers of arsenic which had been derived from hops that had been dried with sulphur containing this element. Haedden's recent work in determining the arsenic content of fruit trees is well known.

Statistics of the United States geological survey show that in 1907 there were produced in that country 1751 tons of

arsenious oxide, having a value of \$163,000, while foreign arsenic, white arsenic and sulphides of arsenic were imported to the amount of more than 5,000 tons during the year 1908. It may be mentioned here that many times the arsenic required for our use is wasted annually in the smoke from the great smelters of the West.

These compounds of arsenic are put to a variety of uses, among which may be mentioned glassmaking, manufacture of paints and pigments, and for chemical and medical purposes. We are here, however, more particularly interested in their well-known application as insecticides.

Among the compounds of arsenic which have been utilized for combating pests probably the most important are Paris green, London purple, calcium, arsenite and lead arsenate. Paris green is a compound formed by boiling verdigris, a baser acetate of copper, with white arsenic. It has long been used as a standard insecticide and when pure consists of

	Per Cent.
Arsenious oxide	58.65
Copper oxide	31.29
Acetic acid	10.06
Total	100.00

The standard requirements for Paris green are that it shall not contain more than $3\frac{1}{2}$ per cent. of water soluble arsenious oxide, nor less than 50 per cent. of arsenious oxide combined with copper. The danger in the use of Paris green lies in its content of soluble arsenic to which, as is well known, all foliage is more or less sensitive. Addition of lime has been found to act favorably, up to a certain point, in preventing this injury. White arsenic itself is soluble in 100 parts of water and arsenite and arsenate of lime

are by no means insoluble in this medium. London purple, a waste product from dye works, has also proven objectionable as an arsenical spray on account of the large amount of soluble arsenic which it contains.

The requirements of an arsenical insecticide may be stated, therefore, as follows: First, it must contain arsenic in a very insoluble form and in a form which will not oxidize or convert on exposure in the air into a soluble compound; second, possesses great killing powers and adhesiveness; third, have the physical property of remaining in suspension when mixed for spraying. These requirements are fairly well met by arsenate of lead; in fact, no arsenical compound has yet been devised which, taking the above points in consideration, excels it as an insecticide.

Lead arsenate was first prepared and studied by the pioneer chemists, Berzelius and Mitscherlich. Its use as an insecticide was suggested by F. C. Moulton, a chemist in the employ of the Massachusetts Gypsy Moth Commission in 1892, and it was first tested in the field in 1893. The importance of its discovery as an insecticide can be well seen when we consider that there are now about 20 firms manufacturing this product in the United States with an approximate annual output of 2,500 tons (1908) valued at more than \$500,000.

It has been pointed out by a number of investigators that the composition and properties of arsenate of lead depend upon the kind of chemicals used as well as the methods of manufacture. As the source of arsenic for this compound, sodium arsenate is used, while the lead is furnished in the form of the nitrate or acetate, the latter being commonly known as sugar of lead. If the nitrate of lead is employed the resulting product, as shown by analysis, contains arsenic trioxide and lead oxide in the ratio of approximately one of the former to two of the latter. This product is variously termed as monoplumbic arsenic, plumbic hydrogen arsenate, or acid arsenate of lead. When the acetate of lead is utilized in making lead arsenate a product is obtained in which the ratio of arsenic oxide

to lead oxide is approximately one to three, and this product is designated as triplumbic, ortho, or neutral arsenate. According to the results obtained by the United States Bureau of Chemistry the product made from the acetate of lead is usually a mixture of the ortho and acid arsenates, while Pickering in England concludes that it is largely the ortho or neutral form. When pure and dry the acid arsenate contains 64.26 per cent. lead oxide, 33.15 per cent. arsenic oxide, 2.59 per cent. water of constitution, while the neutral arsenate under the same condition contains 74.40 per cent. lead oxide and 25.60 per cent. arsenic oxide. It will be noted that a higher per cent. of arsenic is found in the pure acid arsenate. In the manufacture of the lead arsenate sodium acetate and acetic acid are formed as byproducts in case lead acetate is employed, and sodium nitrate when nitrate of lead is used. These products are applied along with the spray in case of home-made mixtures, but they are removed by washing in the better grades of commercial arsenates.

The commercial arsenates, as is well known, are made in paste form, containing varying quantities of water in order to maintain their property of remaining in suspension. It is essential, however, that the water content of the arsenate as purchased be not excessive, as the per cent. of arsenic, their active agent, is thereby cut down. Thorough washing of the arsenate is likewise necessary in order to remove the excess of soluble by-products therein and preclude dangerous amounts of soluble arsenic being present. Looking to this end standards for commercial lead arsenate have been laid down in the new Federal insecticide act of 1910 which took effect January 1, 1911. According to these standards lead arsenate must not contain over 50 per cent. of water, nor less than 12½ per cent. of total arsenic oxide, nor more than three-quarter per cent. of soluble arsenic oxide. It is further stated that no substance shall be packed with it which will reduce, lower or injuriously affect its quality or strength. Extra water may be added provided it is so stated on the label.

The relative merits of the ortho and acid arsenates have been widely discussed and many conflicting statements concerning them may be found. It is often stated that the acid arsenates are more likely to cause injury to foliage than the neutral, but this point, so far as I am able to determine, lacks experimental proof. In recent tests conducted by the United States Bureau of Entomology no more injury was noted from the use of the acid arsenate on sensitive foliage than was obtained when the neutral arsenate was employed. In order to test this point samples of the pure arsenates were prepared by us and sensitive bean leaves heavily coated with the paste of each form of arsenate. No injury from either was noted. The salts which, as has been stated, are co-formed in these preparations, and are still present in the poorly-washed product may, however, be responsible for some of the injury noted, nitrate of lead, for example, having been proven in field experiments to have a caustic action on foliage. Kirkland showed that the acid arsenate of lead is more poisonous than the neutral, probably due to its excess of arsenic. From the physical standpoint the acid arsenate according to some authorities seems to have an advantage over the neutral in remaining better in suspension. In our hands the home-made neutral product excels in this respect. It may be mentioned here that if the arsenates once dry out their mechanical structure is changed and they lose in large part their property of standing up in water. Unused arsenates should therefore be kept covered with water to avoid this.

That injury may arise from the use of waters containing certain salts in mixing lead arsenates was suggested by Haeden, of the Colorado Station, and within the past year quantitative estimations of the solvent action of various substances on this arsenate have been made by us at the Oregon Station. In these tests which we have carried out Bean's ortho arsenate was used as a representative sample of the neutral arsenates and Hemingway's as a type of the acid arsenates. These samples were subjected under the same conditions to the following sol-

vents: First, distilled water; second, distilled water and carbonic acid; third, solution of common salt .23 per cent. and chloride of lime .46 per cent.; fourth, solution of sulphate of soda .10 per cent. natural; fifth, alkali water containing sulphate of soda, common salt and carbonate of soda, in all 40 grains to the gallon.

Solution No. 3 was prepared to imitate the saline well waters often found in the Willamette Valley and No. 5 a natural alkali water containing the maximum amount of alkali salts permissible in a drinking water. Results were obtained as follows:

SOLUBLE ARSENIC PENTOXIDE FROM
LEAD ARSENATE

Solutions used	Bean's Ortho A S205 per cent.	Heming- way's Acid A S205 per cent.
Distilled water .....	.073	.108
Distilled water and Carbonic Acid .....	.125	---
.23 per cent common salt .....	.201	.310
.46 per cent chloride lime .....	.106	.155
.10 per cent sulphate soda .....	.106	.155
Alkali water, 40 grains to gallon .....	.536	1.833

It appears from the above results that both forms of the lead arsenate, which are both soluble, are slightly more soluble in saline waters than in pure waters. Alkaline carbonate waters especially exert a solvent action on these arsenates and the reaction is much more pronounced in the case of the acid arsenate. Tests made by other investigators have shown that weak solutions of common salt likewise exert a very marked solvent action on the arsenate. It is evident that waters containing considerable quantities of alkali salts should be avoided when mixing lead arsenate for spraying purposes, and that in general it is necessary to exercise care in the selection of waters for mixing these arsenates, if the soluble arsenic thereby formed be kept at a minimum.

The mixing of the lime sulphur solution and lead arsenate as a combined spray has been suggested and used by Professor Cordley. At his suggestion we analyzed in the summer of 1909 a mixture of arsenate prepared in proper proportions for application and found only small quantities of soluble arsenic in the mixture. It was noticed later, however,

that the mixture of an acid arsenate and lime sulphur was much darker in color and we were led to make a comparative study of the reactions taking place and the products formed when each of these arsenates is mixed with the lime-sulphur solution under spraying conditions. As in the former tests, Bean's ortho and Hemingway's acid arsenates were taken as types. The arsenates were added in the proportion of four pounds to 100 gallons of Niagara lime sulphur diluted one to thirty, shaken occasionally for twenty-four hours, then filtered and the solution and residue analyzed. The neutral arsenate solution was found to contain 25 per

lead sulphide, free sulphur being at the same time deposited. The soluble arsenic is then derived from the partial solution of the calcium arsenate thus formed. The reactions, it is seen, are much more pronounced with the acid than with the neutral arsenate, and it is therefore advisable to employ the neutral form of the arsenate when desiring to combine lime-sulphur and lead arsenate.

During the past season samples of the different brands of arsenates used by the orchardists of the state have been collected by a field representative of the station and analyzed by us. Results of these analyses are recorded as follows:

COMPOSITION OF COMMERCIAL LEAD ARSENATES, 1910

Sample No.	Grasselli per cent.	Bean's per cent.	Sherwin Williams per cent.	Swift's per cent.	Hemingway per cent.
	1	2	3	4	5
Moisture.....	45.70	53.33	51.16	54.12	61.42
Total arsenic oxide (As ₂ O ₅)	14.92	11.17	12.56	14.89	10.39
Total lead oxide (PbO)	36.97	34.69	35.03	29.12	25.93
Soluble arsenic oxide .....	.21	.03	.20	.28	.19
Soluble impurities .....	.49	.66	.73	.60	.46

cent of arsenic oxide, while the solution from the acid arsenate contained 1.98 per cent.—a serious quantity of soluble arsenic in the case of the acid arsenate. Analysis of the residues in each case gave the following results:

ANALYSIS RESIDUES FROM LIME-SULPHUR AND LEAD ARSENATE

	Bean's Ortho per cent.	Hemingway's Acid per cent.
Free sulphur.....	.70	20.80
Sulphide of lead.....	1.47	14.80
Lime calculated as calcium arsenate		24.65

A study of the products formed in the above mixture indicates there is a partial interchange of the lime and lead resulting in the formation of calcium arsenate and

As compared with the Federal standards sample No. 1 is the only one which does not contain more than the legal requirements of moisture. Two samples, Nos. 2 and 5, fall below the legal requirements of total arsenic oxide. The samples are all free from excess of soluble arsenic and the small amount of soluble salts they contain bears evidence of proper washing.

In conclusion I may say that the chemical department of the Oregon Station is at present engaged in the development of new arsenicals and other insecticides, and we trust that our investigations in this line will ultimately prove of value to the extensive horticultural interests of the state.

BUT ONCE

O, I shall pass through this world but once. Any good therefore that I can do, or any kindness that I can show, to any human being, let me do it now. Let me not defer or neglect it, for I shall not pass this way again.

Anonymous

Arbor Day in the Country

How Women can Awaken Man to the Necessity
of Making Rural Homes More Beautiful

By W. T. MACOUN
Dominion Horticulturist, Ottawa, Ont.

MUCH has been done during recent years towards the beautifying of Canadian cities and towns by the awakening of the people to the importance of making their homes more attractive by the planting of trees, shrubs, vines, and herbaceous plants. Many influences have been at work, chief among which are the Horticultural Societies, which through their organizations have been able to do much to bring about the great improvement which is already apparent.

In the country, unfortunately, it is quite otherwise, and one fails to note any decided improvement in the home surroundings during recent years. To us it seems almost sad that in the older settled parts of Canada a large proportion of farmers' homes are bare and uninviting to the passer-by. The contrast between the city and country home in Canada becomes greater every year, and greatly to the advantage of the city. This should not be so. With the greater room in the country and the abundant sunlight, the country home should be a delight to all beholders, and we are glad to say some country homes in Canada are a great credit to their owners.

Can nothing be done to change all this. We believe that something can be done

if interest can be awakened in the right quarter, and it seems to us that the Women's Institutes are the best organizations to effect a change. Through organizations, plants could be ordered and distributed to the members; or as there are so many beautiful wild trees, shrubs, and vines which can easily be obtained in the woods without cost, expense need not be a consideration. Then, there should be a certain day or afternoon set apart every year as Arbor Day, when the women could see to it that some planting was done about the home grounds. A vine one year, a tree or shrub the next, a flower bed, a hedge, a flower border, a well-kept lawn; all these would gradually come and in a surprisingly short time there would be a great change. One can imagine Arbor Day becoming a day looked forward to in every community, when each family would vie with its neighbor in making the greatest improvement in the shortest time.

Will not the women of Canadian rural homes rise in their might and see to it that their homes are made as beautiful as any in the land? There is abundant information about gardening that can be obtained free for the asking. Which will be the first Women's Institute to take this good work in hand? Perhaps some have done so already.

Fruit Pest Inspection

THE following observations by Mr. Thomas Cunningham, Chief Inspector of Fruit Pests for British Columbia, should receive the careful attention of importers of nursery stock:

Mr. Cunningham in a letter to *The Fruit Magazine* says: The public press of

this province, without distinction of party, has always given this department very efficient assistance; indeed, I have always held that without the co-operation of the press we could never have enforced our Horticultural Regulations, which are proving of such immense advantage to

the fruit-growing industry of British Columbia. I would therefore take the liberty of requesting you to grant me the use of your valuable columns to direct the attention of all importers of nursery stock to Section 4 of the Horticultural Regulations, which provides that certified invoices of all shipments of nursery stock, trees and plants, must be furnished to the Inspector of Fruit Pests, at Vancouver, at the time when such shipments are delivered for inspection.

The reason for this is that when a case of goods arrives, we know by the invoice what it should contain, and are prepared to check the contents over with the invoice. This greatly expedites the business of inspection and enables us to deal promptly with all importations.

It is clearly in the interests of the importers that we should be able to detect any mistake that may have been made in shipping the goods. All this was carefully considered when the Horticultural Rules were adopted, but unfortunately many of the importers neglect to comply with this regulation.

I would therefore urge that a general observance of this rule be adopted.

The importations of nursery stock are largely on the increase, and I am just completing additional facilities for inspection.

Our staff will be doubled this year, so that whatever delays may have occurred in the past may be avoided in future, if the importers comply with the regulation above referred to.

The Reciprocity Agreement

JUST as the last forms of this number of *The Fruit Magazine* were going to press the Reciprocity Agreement, negotiated between the representatives of Canada and the United States, was announced.

Immediately the party press are filled with scare headlines extolling and condemning the terms of the agreement as suits their political bias and it is difficult at the moment to say just what the effect on the respective countries, as a whole, will be should the agreement be ratified by the Ottawa and Washington Governments.

While reserving the right to amend our views in the light of further detailed information, at first sight it would appear that the agreement as a whole is fair, and we are comforted with the feeling that the Ottawa diplomats are not so likely to be humbugged by the representatives of the United States as if our case had been in the hands of Old-country statesmen. One question, however, stands out clear and will take some answering, viz., Are we justified in sacrificing the interests of one class for the advantage of another in order to show our friendship

toward our neighbors and our willingness to promote trade between the two peoples? If it was right that the farmer should have a reduction of duty on farm implements, that reduction should be made; and if the United States wants our wheat, it is right that they should remove the duty on same. But that should hardly be a sufficient reason for opening our prairie market to the fruit-growers of the United States and thus cripple what is as yet an "infant industry" in Canada. In the matter of small fruits the result will be that the average housewife will put down all her jam at the tail end of the rush season from the south, and, the prices being depressed at that time, it will be difficult to get them up to a living profit when the better quality of fresh fruit comes on the market from eastern and western Canada.

There are three standpoints from which to view the tariff question—a local, political and national. With the first two we are not so much concerned, but in a future issue we will take occasion to deal with this reciprocity agreement from a broad national standpoint.

Canada's Productiveness

SPEAKING at Birmingham, England, recently, Mr. W. A. MacKinnon said:

A year ago I was privileged to announce at the Royal Colonial Institute that some trial shipments of Canadian peaches and pears had been made to various points, including Birmingham, and that the experiment was, on the whole, successful. That success has now been followed up by a combination of individual effort and Government support, and commercial shipments to the number of over 2,000 cases (each containing about two dozen peaches) have been marketed this autumn in Great Britain with complete success. Grapes also have been exported, the market price of which is, in the fruit-growing districts, quoted, not by the pound or basket, but by the ton, and some idea of the vast production may be gathered from the fact that this delicious fruit is considered to pay the grower handsomely if it bring anything above \$20 per ton. When I add that the distinctly fruit-growing districts are to be found in every province of the Dominion save the three known as prairie provinces, that even in these important progress has been made towards fruit production, and that in all parts, whether named or not as sources of market supply, the fruit garden is everywhere in evidence, and its produce to be found on every table, it may perhaps be admitted that there is something other than poetic fancy in the title of our lecture today.

RECENT DEVELOPMENTS

A noteworthy feature among the developments of the last few years has been the greatly increased attention paid by farmers to their orchard lands. They have been astonished to find that the few acres of orchard planted perhaps by their grandfathers have been bringing in a handsome return, frequently netting a higher profit than all the rest of the farm. Formerly the orchard had furnished a playground for children or a pasturage

for cattle; it was depended upon to supply the family with a store of apples for autumn and winter, and an abundance of culls for the pigs. Then came the visits of apple-buyers, searching far afield as the markets of this and other countries became more insistent. The farmer then began to look upon apples as really worth something in cash; the fruit was more carefully picked and packed, the best no longer turned over freely for domestic consumption, and even the supply of the pigs began to be carefully scrutinised. Still the orchard continued to be looked upon in the main much as some people regard their poultry—as a source from which something may be obtained, and if so, it is money found. But these times have changed for many and are changing for all, since it has been realized that money can be made by growing the best fruit, and that the best can only be grown in properly-tended orchards. In addition to the natural advantages of the soil and climate (the summers being long and warm, while the winter cold kills off insect enemies, and is accompanied by a snow blanket to protect the roots from frost) the Canadian fruit-grower is blessed with intelligent assistance, furnished by the Federal and Provincial Governments alike in a variety of different ways, ranging from the object lessons of experimental farms and instruction given at farmers' institutes during the winter, to practical demonstrations at orchard meetings in spring and summer, inspection of fruit as prepared for market, and the securing of cold storage and other necessary transportation facilities. Two other factors must be mentioned very briefly in passing, the first being the practical helpfulness of the agricultural press, edited for the most part by men who combine the advantages of personal experience in fruit-growing with a thorough agricultural college training. The other factor is the educational effect of modern fairs and exhibitions, whose various managing boards have recognized their responsibilities.

Diseases of Pome Fruits

Fungus and Bacterial

By PROFESSOR H. S. JACKSON, OF THE
OREGON STATE AGRICULTURAL COLLEGE

AN inquiry into the diseases of almost any crop shows that they may fall under any one of the following heads:

First—Diseases caused by parasitic plants, commonly fungi or bacteria.

Second—Diseases caused by animal parasites, principally insects.

Third—Diseases due to adverse conditions of the environment, such as light, water, soil, nutriment, etc.

Fourth—Physiological troubles of uncertain character which on investigation usually prove to belong under one of the above heads.

To one who has made a study of the diseases of pome fruits in the Northwest it is evident that diseases are present within our area which fall under each of the above groups. One of the most notable facts is the great abundance of diseases of the third and fourth groups. Notable among these are the physiological fruit spot or fruit pit, little leaf or (so called) winter injury of pear or apple, blighting of buds of pear in spring, apple-tree rosette, so-called arsenical fruit spot, etc.

It is not the purpose of this paper to discuss any of the above-mentioned diseases. The knowledge concerning them is slight and based mainly on scattered observations or hastily-drawn conclusions so that a profitable discussion is not possible till they have been thoroughly investigated.

It is my purpose today to discuss briefly the cause and method of prevention of the fungus and bacterial diseases of the apple, pear and quince which are known to occur in the Northwest. The number of diseases of pome fruits in Oregon known to be caused by fungi or bacteria is relatively few when compared with the number of similar diseases of these crops known in the Eastern or Middle-Western

states. As many as a score of fungus and bacterial diseases of the apple are known in certain sections of the Eastern United States, while in Oregon only six or seven have been reported.

APPLE DISEASES

Scab (Venteria inquilans).—Perhaps the most serious disease of the apple known in Oregon and the Northwest is the apple scab. This is a fungus disease, the summer spore stage of which attacks both foliage and fruit. On the foliage dark olive-green or black spots appear which at first are more or less circular in outline, but which later become irregular and coalesce. Frequently the leaves curl and wrinkle in a characteristic manner and when the spots are abundant fall prematurely. Not infrequently considerable defoliation may take place. On the fruit the fungus produces more or less circular spots of a greenish-black color, rendering it unsightly and unmarketable. Frequently when infection of the fruit takes place early the fruit is distorted in a characteristic manner. Spores, known as conidia or summer spores, are produced in abundance in the spots of both leaves and fruit, and being disseminated by the wind, germinate and produce the spots on other leaves and fruit. Several generations may thus occur during the season. Scab spreads most rapidly in Oregon during the spring and early fall. On the fallen leaves which are affected with scab the fungus continues to develop as a saprophyte during the winter, producing in the spring a second spore stage bearing the "perfect" or sexual spores. The spores are disseminated about the time the blossoms open. So far as is known all primary infection of the leaves and fruit in the spring takes place following the dissemination of the sexual spores.

As with all fungus diseases of this nature treatment must be preventive rather than curative. The method of treatment is dependent on the life history of the fungus causing the disease. Since the fungus winters over the fallen leaves it would be advisable to destroy all such leaves before blossoming time. It has frequently been recommended by pathologists to plow the orchard early before the trees blossom so as to bury the leaves and thus reduce the primary infection. Theoretically the best way to destroy the leaves would be to rake and burn them, but pathologists have hesitated to make this recommendation on the grounds of impracticability. I am informed by certain Hood River growers that they would not consider it at all impractical under their conditions to rake and burn the leaves.

In any case the trees should be given at least three sprayings during the spring. The first application should be made as the blossom buds begin to separate in the cluster and show color; the second should be applied just after the petals fall and followed by a third application ten days or two weeks later. Should the third application be followed by prolonged rains a fourth may be found profitable. Formerly Bordeaux mixture was used almost entirely as a preventive of scab, but in certain sections of this country and notably under the climatic conditions prevalent in the Northwest, the injury from russetting has been so serious as to make its use prohibitive. On this account lime-sulphur has largely supplanted Bordeaux as a remedy for apple and pear scab.

The experience during the present season has shown that care must be exercised in the use of lime-sulphur during hot weather. Considerable injury resulted in the Hood River Valley wherever the third spraying preceded very hot, still weather. Under these conditions sun scald normally present in slight amount on unsprayed trees was very much increased. A russetting similar to that produced by Bordeaux mixture was not uncommon. This is the first season that lime-sulphur has produced any serious injury to fruit when used in the proper strength. This injury, however, has not

been general throughout the state. No serious injury has been reported from the Willamette Valley.

The season's experience leaves many growers in doubt as to what spray to use. We cannot recommend the use of the Bordeaux mixture. Lime-sulphur still remains the best remedy yet discovered for apple scab. On account of the experience of the past season, however, the grower must use his judgment about making the third application. In some seasons it would without doubt be perfectly safe to omit it, but in seasons favorable to the development of scab its omission might prove disastrous.

On account of the fact that scab frequently develops rapidly in the fall we are ready to recommend a fall spraying with summer strength lime-sulphur to be applied before the fall rains begin. From experiments carried on during the past season in the Willamette Valley no injury to the fruit resulted from a spray applied just previous to the first fall rains. That has the advantage of preventing fall infection and not only reduces the injury to the fruit by this form of the disease, but prevents a large part of the infection on the leaves and thus limits the number of infested leaves which fall to the ground and develop the perfect stage in the spring.

Apple Tree Anthracnose (Gloeosporium malicorticis).—The apple tree anthracnose is caused by a fungus which attacks the bark of the apple causing sunken cankers. Cankers are first to be observed in fall or early winter as round, slightly sunken dark-colored spots which slowly enlarge and elongate, making little visible growth during the dormant season, but on the advent of spring and the consequent renewed activity in the life processes of the tree continue to grow rapidly. The cankers are mature in midsummer and active spread ceases. At this time the cankers are deeply sunken, dark in color, with a limiting crack around the edge. Cankers are most abundant on the younger branches of a tree, though they occur occasionally on the larger branches. On very young trees cankers may appear

on the trunks, frequently girdling and killing them.

The fungus causing the disease produces spores during the late summer and fall in pustules which are visible to the naked eye as minute cream-colored cushions which break through little transverse or triangular cracks in the sunken dead bark of the cankers. These spores are held together in the pustule in a mass till the first fall rains, when they are separated by the moisture and are scattered by the wind. Those which find lodgment on branches may germinate and enter the tissues of the bark, growing slowly in the tissues during the winter and spring, producing the mature cankers the following summer, as previously described.

Infection takes place then in the fall and early winter, any time after the first fall rains. It has formerly been recommended to spray with Bordeaux mixture or lime-sulphur as soon as the fruit is picked. It has frequently happened that large growers have not been able to spray owing to the fact that by the time the apples were picked the season was so far advanced that on account of the frequency of the rains no opportunity was offered. On this account an experiment was conducted in the Wallace orchard at Salem to test the effect on the fruit of several different strengths of lime-sulphur as well as the Bordeaux mixture and the ammoniacal solution of copper carbonate. The variety sprayed was the Spitzenberg and it was found that the deposit made on the fruit by the application of spray during the last week in September did not injure the fruit in any way or interfere with the uniform coloring except in the case of the Bordeaux mixture. Occasionally where the Bordeaux mixture collected in drops and made a thick deposit the color did not develop uniformly and caused a slightly mottled appearance when the fruit was wiped.

We feel safe in advising growers who are troubled with anthracnose to spray with lime-sulphur, summer strength, or ammoniacal solution of copper carbonate as late as possible before the first fall rains. The former spray is to be preferred on account of the low cost and ease of

preparation. This spraying should be followed by another application as soon as possible after the fruit is picked, using winter strength lime-sulphur or Bordeaux mixture. In very seriously infested orchards a third spraying might prove beneficial and should be applied about two weeks after the second.

Mushroom Root Rot (Armillaria mellea in part).—This is a fungus disease that attacks the roots of fruit trees and in the Northwest is most common on the apple and plum. Trees affected with mushroom root rot grow slowly, the foliage becomes yellow and drops early in the season. Trees once affected grow rapidly worse and finally die, usually in midsummer or early fall. If a tree is suspected of being attacked by this fungus the soil should be dug away from the crown and larger roots and the bark examined for the presence of somewhat knotty, shining black strands of fungus tissue, the so-called rhizomorphic strands, which are found attached to the surface. Another reliable symptom of this disease is the appearance of a white, felty or velvety layer of mycelium just beneath the bark which imparts a characteristic mushroom-like odor to the affected roots.

The fungus causing this disease is a mushroom or toadstool known as *armillaria mellea*. The sporophores or "toadstools" may appear about the base of seriously affected trees. The fungus is capable of spreading under ground from tree to tree by the rhizomorphes described above.

This fungus, in a closely related form, is common, growing on all kinds of buried wood, particularly on oak stumps and roots. On this account it has been supposed that this disease was found most commonly in orchards which had been planted on newly-cleared land. This supposition does not seem to have been proven. Indeed it is still a disputed question as to whether the form occurring so commonly on decayed wood is the same as the one which is parasitic on fruit trees.

No method of treating a tree once affected is known. Such trees should be removed as soon as shown to be infected,

the larger roots grubbed up and the whole burned. Such a diseased tree is a menace to those about it. Another tree should not be planted in this place till a period of at least three years has elapsed. Should the sporophores be found they should be removed and burned at once as each one is capable of producing myriads of spores.

There is considerable evidence to show that all the fungus root rot of fruit trees is not caused by *armillaria mellea*. Investigation will doubtless show that there are a number of fungi which cause root rots of fruit trees.

Crown Gall (Pseudomonas tumifaciens).—Crown gall is a very common and widespread disease which attacks many fruit trees and plants besides the apple. Upon the different hosts the galls vary little in form and appearance. The galls as a rule are annual, beginning to form in the spring as the tree begins active growth and maturing in the fall. At first they are small, nearly spherical masses of more or less succulent tissue, whitish or translucent in appearance, but rapidly becoming darker till at maturity they are dark-brown and warted. When occurring on small roots they may be only about one-fourth inch in diameter, while on nursery stock they may be about the size of a walnut. On large trees in the orchard they may reach four to six inches in diameter.

The galls usually occur at the crown or on the roots, though in some plants they are found on the stems. The most common point of attack is just beneath the ground at the crown of the plant.

The disease is distributed mainly through nursery stock and is particularly abundant on root-grafted trees. It is a contagious disease and may spread from tree to tree in the nursery row and on certain of its hosts may spread in the orchard. On young apple trees two forms are known, the ordinary crown gall and the hairy root. The latter occurs on seedlings, grafted or budded stock, and is characterized by a stunted root system, accompanied by an excessive production of small fibrous roots often originating in clusters from the main or tap root.

The results of recent investigations have left little doubt that crown gall in most of its forms is caused by bacteria. The organisms have been isolated from tissues of galls found on peach, grape, hop, hard gall of apple, hairy root of apple, etc. By inoculating the organisms into healthy tissue the typical disease has been repeatedly produced.

It is probable also that the trunk kernel on apple limbs and trunks found in some localities is an aerial form of crown gall.

There has been considerable discussion in the horticultural press and elsewhere regarding the advisability of planting apple trees affected with crown gall or hairy root. It is no doubt true that many trees throw off the disease when planted in the orchard and entirely recover. It is also equally true that some trees do not. Crown gall and hairy root are undoubtedly diseased conditions and as such should be avoided in planting.

Powdery Mildew.—This disease has been considered most serious on nursery stock, but under certain climatic conditions the disease is not uncommon on full-grown trees in the orchard. It usually attacks only the tips of actively-growing branches but may occur in spots on the underside of otherwise unaffected leaves.

This disease is caused by a fungus that develops mainly on the surface of the twigs and leaves, sending feeding threads only into the external cells. The fungus as it usually occurs forms a covering on the growing twigs and leaves. This gives the twigs a white mouldy appearance due to the abundant growth of the threads of the fungus in considerable quantity on the surface. Sometimes this is so copious as to resemble felt. Spores are produced in great abundance under favorable conditions and give the affected twigs and leaves a frosty appearance. Affected twigs are usually more or less thickened and shortened, and frequently distorted. The leaves present a wilted appearance and are smaller than normal.

When the disease is abundant the normal functions of the tree are interfered with on account of the reduction in the foliage. Affected trees may fail to

form blossom buds, or the fruit is not of good size and quality.

The fungus hibernates as mycelium on the affected twigs. This is the principal method by which the fungus is carried over the winter. Sexual spores in protected fruit bodies partly buried in the felted mass of mycelium may be formed.

It has been found that contrary to expectation, spraying in the spring before the buds open does not materially reduce the spread of the mildew. Investigations in California seem to show that a special spray, iron sulphide, will control the disease if applied as soon as the foliage buds open and at frequent and regular intervals. In most sections of Oregon this disease is not sufficiently serious to warrant special treatment. Pruning off the diseased twigs and burning them will usually be sufficient to hold the disease in check.

PEAR DISEASES

Pear Scab (*Venturia pyrina*).—A fungus disease similar to the apple scab attacks the pear and in some sections of the state is very serious. The life history of the fungus is the same as for apple scab. The treatment is the same. No injury has been reported where lime-sulphur is used.

Crown Gall (*Pseudomonas tumefaciens*).—Crown gall is known to occur on the pear, but is much less common than on the apple.

Fire Blight (*Bacillus amylovorus*).—The fire blight, or pear blight, is the most serious disease that is known to attack the pome fruits. It attacks besides the apple, pear and quinces, a number of other trees belonging to the pome family.

This disease is of such a nature that to be adequately described one must necessarily go into details. Sufficient time is not available for an adequate discussion and I will therefore refer those interested in the life-history and a detailed description to Circular-bulletin No. 7, published by the Oregon Agricultural Experiment Station which will be sent to all who apply for it.

I propose to spend the remainder of the time allotted me to a general discussion of the treatment of this disease. As

is well known the only method of combating fire blight is the removal of all cases of infection. Unless a person is an expert it does not pay to take any chances with fire blight, therefore it is recommended that all cases of blight in any of its forms be promptly removed.

The method of cutting out fire blight has everything to do with the success of treating this disease. No cutting should be done blindly. In all cases the extent of infection should be determined before the cut is made. As a general practice it is recommended that where it is found necessary to remove branches or limbs the cut is made at least a foot below the apparent extent of infection. Frequently a branch may be saved by carefully cutting out a canker, forming a clean wound. Always make a clean cut, never break off a branch or fruit spur, but cut it smoothly.

Another very important matter is the disinfection of all cut surfaces. Whenever a branch is cut off or a canker cleaned out disinfect the wound with a corrosive sublimate in the proportion of 1-1000. Never use any other disinfectant. Disinfect the tools frequently as an added precaution.

Inspections of the orchard should be made frequently and thoroughly. While it is an excellent practice to always be on the watch for blight during general orchard work, it is essential that special inspections be made for the sole purpose of removing blight. Inspections should be thorough and made by competent persons thoroughly familiar with the disease. Infested orchards or orchards in infested districts should be inspected at least every week during July and August and frequently at other seasons of the year. Inspectors should work toward removing every possible canker that may hold the germs over the winter. If it would be possible to remove all cases of hold-over blight there would be no source of infection in the spring and blight would be eradicated, since the blight organisms are known to hold over only in the bark of cankers. The difficulty occurs in the fact that blight germs are carried long distances by insects and to eradicate the disease all hold-over cankers throughout

an infested area would have to be removed. It is not reasonable to expect that this condition will ever be realized in any blight-infested district. Each grower must, however, do his part and if any are found who will not conscientiously inspect his orchard and remove the blight then the law should be brought into effect.

Perhaps the most important factor for the successful eradication of blight is proper education of the growers, to know blight in all its phases and to practise the proper methods of eradication. Public sentiment must be aroused and all growers work together.

Fire blight is spreading rapidly and if adequate steps are not soon taken to arrest its spread we may expect it in the Willamette Valley in a short time. If it is found that the people in the infested dis-

tricts are not sufficiently interested or have not the means to hold the disease in check, then the horticultural interests of the state should demand state aid in the control of this disease.

QUINCE DISEASES

Only two diseases of the quince are known in Oregon. The fire blight attacks the quince in those sections of the state where fire blight is known. The other disease is a fungus disease known as the leaf blight and is caused by a fungus known as *Fabraca moculata*. The spots in which summer spores are born are produced on both leaves and fruit. Recent investigations have shown that the fungus winters over on the fallen leaves producing a sexual spore in the spring.

This is not ordinarily a serious disease in the Northwest, but may be controlled by spraying as for apple scab.



J. F. CARPENTER

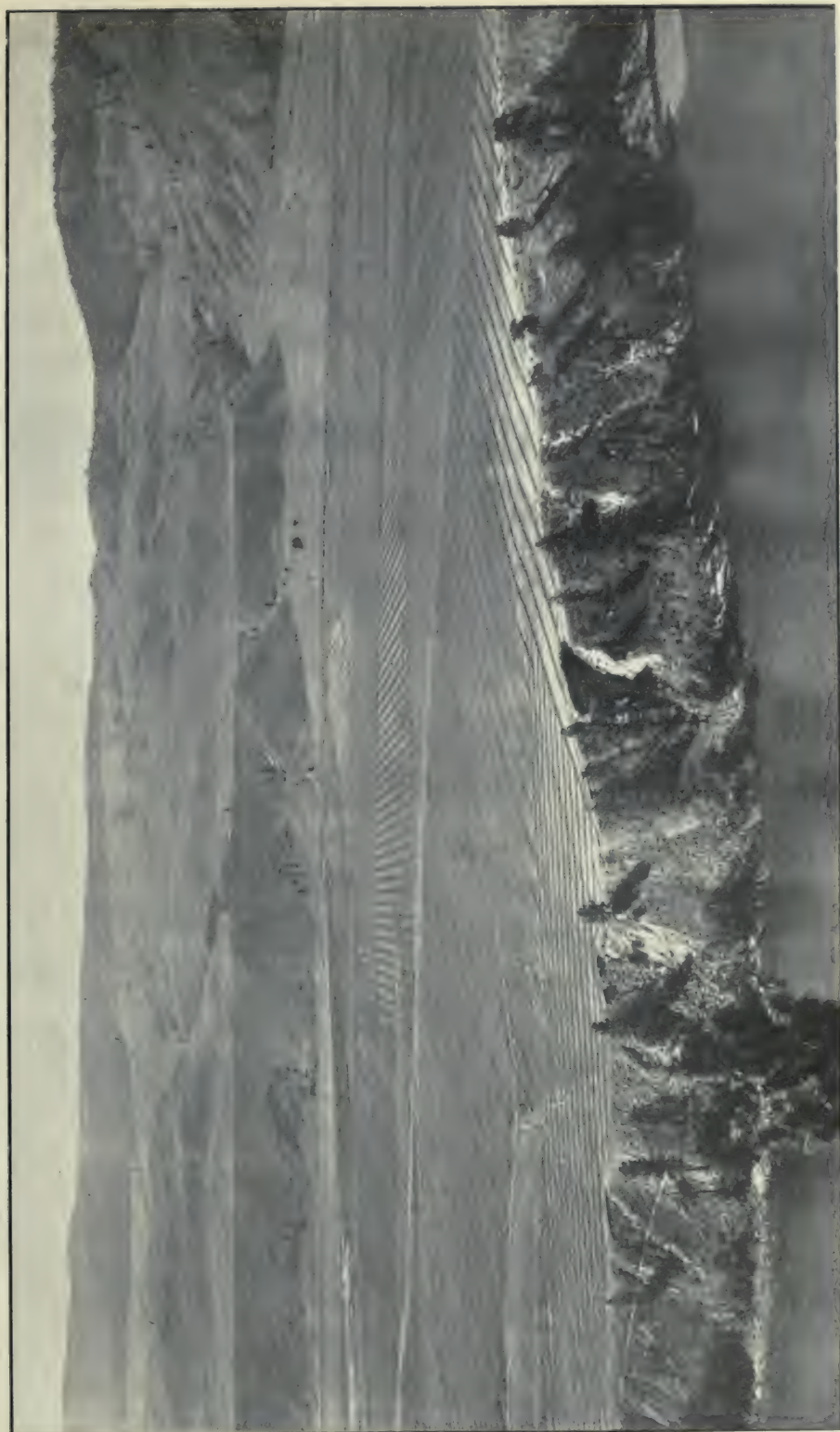
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A NEW ORCHARD BENCH AT WAHACHINE, B. C.



A CRITICAL MOMENT—FIRST CANADIAN NATIONAL APPLE SHOW

Practical Management of Orchard Lands

(Continued from Page 327)

needs careful guarding, as it is more liable to injure the soil than any other method of tillage.

The constant working of the soil and never permitting anything to grow upon it, while valuable for the consideration of moisture, materially fines it, thereby making it wash and gully on sloping land, and exposing a bare surface to the hot summer sun which destroys the humus, causing the soil to cement and puddle much more readily than it normally should.

The loss of the organic content of soil affects the soil in four distinct ways:

1. Destroys granulation or friability.
2. Lessens water-holding capacity.
3. Lowers the temperature in spring and raises it in the summer.
4. Makes it impossible for the air to permeate the soil, thereby hinders nitrification and prevents the escape of carbon dioxide.

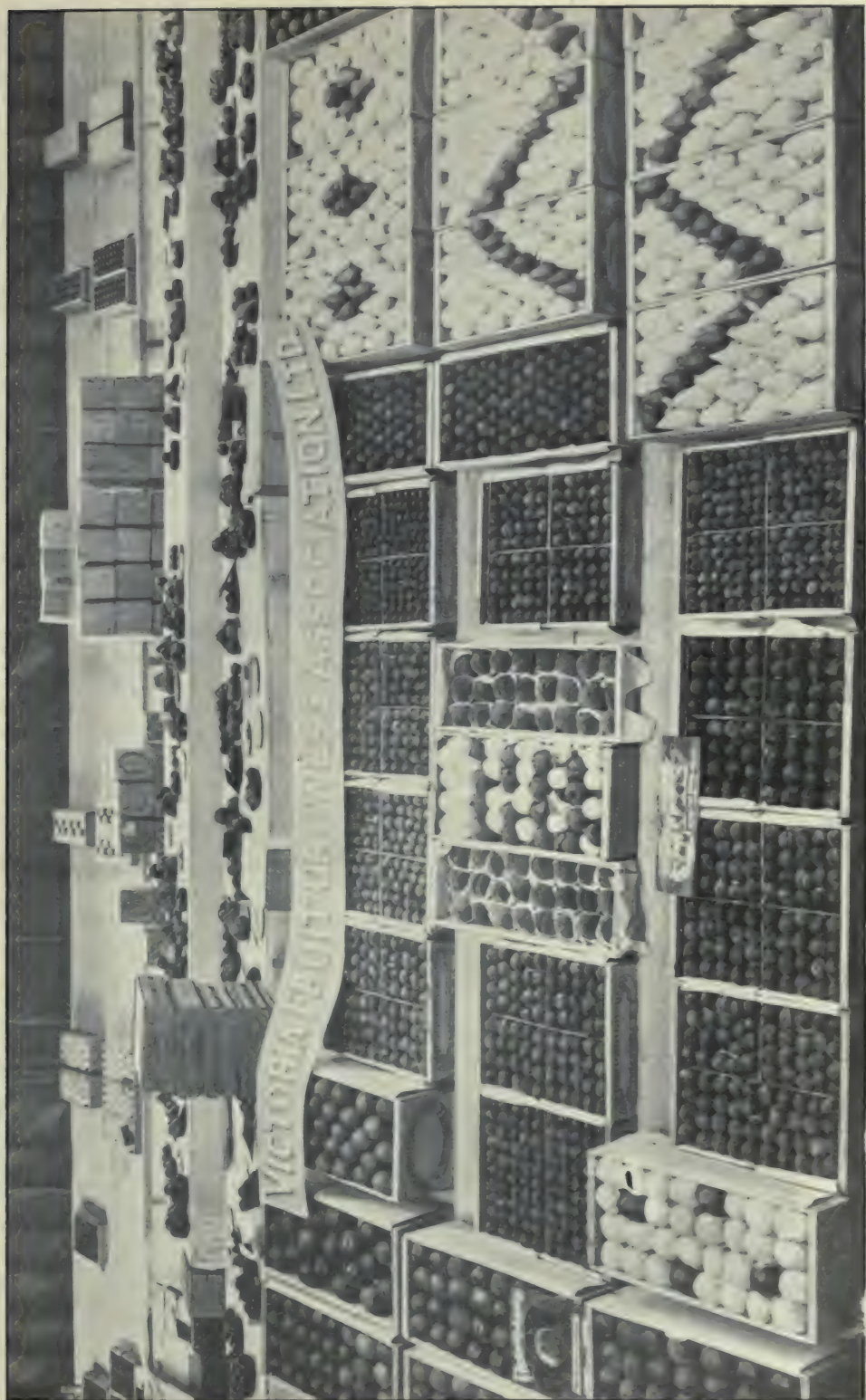
Treatment of this kind injures the soil both chemically and physically and can never be classed as practical agriculture.

The evil effect upon orchards planted on shallow soil and treated in this manner is still more perceptible to the trained eye than most other crops. We have

learned that by repeatedly cutting off the surface roots of young bearing trees, as is done by the cultivator on soil that is underlaid with hardpan, we produce a yellow starved growth similar to, if not the same as is commonly known as, winter desiccation or fruit tree rosette.

CLEAN, EARLY TILLAGE, WITH COVER CROPS LATER

Clean, early tillage, with cover crops later, is the type of tillage that we hold out as the practical progressive tillage. It has all the advantages of the abundantly clean culture and the grass mulch systems and none of the undesirable features. It conserves the early spring moisture at a season when it is plentiful, prepares and makes available the plant food when the tree most needs it, causes early development of leaf and fruit buds, thereby hardening the tree for winter, and brings the fruit to a good size early in the season in order that it may have a longer time to color and put on the finish. Many of our orchards do not start culture early enough in the spring, thereby causing a check in the growth of the fruit or twigs when there should be



AT VICTORIA EXHIBITION, 1910

no check. The growing period of most bearing trees is decidedly short as compared with annual plants, and recognition of this fact should be taken into consideration in the working out of our culture scheme.

The thorough tillage of the early spring and summer months should cease as soon as the fruit has attained sufficient size to insure good, marketable specimens by fall. The exact time cannot be stated, but it varies from August 1 to September 1. At this time some form of a cover crop should be sown at least three years out of five. The nature of this crop will be governed entirely by the condition of the trees. On soil where trees are vigorous and have dark green foliage a non-nitrogen gathering crop, such as fall rye or wheat, may be used; while on soil where the trees are less vigorous and the foliage more or less yellow, a nitrogen-storing crop, such as Canada peas, vetch or clover, should be used.

Too much emphasis cannot be laid upon the use of cover crops in our orchards. They will do more towards keeping the orchard up to high standard than any other single thing that we can use.

Most of us are familiar with their benefits and I shall not repeat them, but suffice it to say that I consider the use of cover crops in orchards the highest type of orchard tillage possible here in the Pacific Northwest. This is good agriculture and will never wear out a soil, and when those growers who practise it are through using their land the soil will be better physically, chemically and in every way than it was when they started, even though they have taken a big crop off every year.

The practical questions of when and how to till can best be solved upon each farm. However, the same general scheme can profitably be carried out in all districts.

Just as soon as the surface of the soil is dry enough to work without slicking or sticking, the disk or cut-away harrow should be run over the surface to prevent crusting and heavy loss of moisture. This can be followed by deeper disking or plowing, as the case may be, but under no circumstances should the surface be permitted to crust and bake.

Where no cover crop is used, fall plowing may be practised to advantage, providing the plowing is shallow close to



PART OF SALMON ARM DISPLAY—NEW WESTMINSTER EXHIBITION, 1910

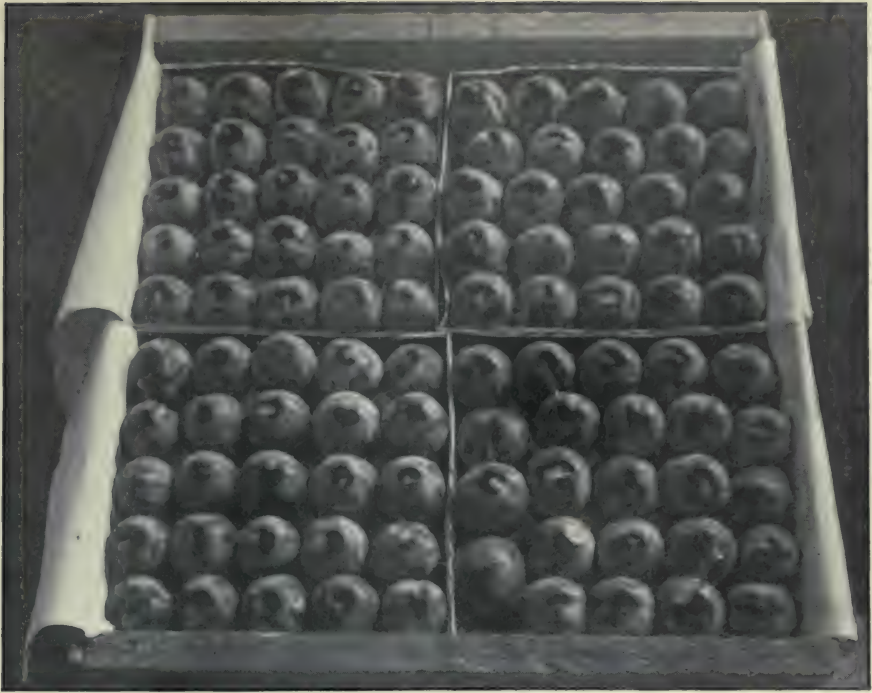


Photo by]

B. C. PLUMS AT TORONTO EXHIBITION

[A. B. Cutting

the trees and deep between them, and the soil is left rough to winter catch and hold as much snow and rain as possible. It will require a minimum amount of labor in spring to put this soil in first-class condition and keep it that way during the year.

The time to plow that part of the orchard seeded to cover crop must be governed almost entirely by the amount of moisture obtainable after May 1 of each year. If there is an abundance to be depended upon, permit the crop to grow as tall as possible without becoming woody, and then turn it under. If there is danger, as there is in all non-irrigated sections of a shortage, leave as late as consistent with safety and then plow. In either case, the plowing must be followed by thoroughly working down the surface with disk or similar tool to chop up the crop and pack the soil down to preserve the moisture. The job will nearly always look rough at this stage, but plenty of team work will soon make it show up in nice shape. Continue the surface tillage from now on until August, and seed again to cover crop if necessary.

The depth at which the surface working tool should run has been carefully tested out both in the laboratory and in the orchard. As a result of these tests we find that from three and a half to four inches of dust orchard mulch is as effective to conserve moisture as ten or twelve inches, and anything less than three inches loses water in proportion to its depth. Four inches is good, but nine is no better, so why waste energy and labor in producing a deep mulch—it being assured, of course, that the orchard was plowed or disked earlier in the season deeper than the mulch.

In conclusion, I wish to again caution against grass and weed mulches as a general practice on one side, and absolutely clean tillage always on the other. Strike the happy medium—build up rather than destroy the fertility and possibilities of the soil, and then in the future, if the market shall become over-stocked with common or poor grades of fruit, you will be able to produce something a grade better than the average, and the market will never be over-stocked with first-class fruits.

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Vancouver Stakes Her Claim
for the
Canadian National Apple Show
IN 1914

The Fruit Magazine

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Industrial Development of Canada

By ELLIS T. POWELL, LL.B., B.Sc.

Before the Royal Colonial Institute, London, England, February 14, 1911

VERY rarely in the history of the world has it been possible for a conscious audience to watch the creation of an Empire. There have been instances where men have watched the occurrence of events which were the inevitable preludes to Empire. Those who heard the stern utterance of Delenda est Carthago, or saw Cleopatra's ships leave Antony to his fate at Actium, were witnesses of episodes which were destined to influence the fate of humanity for all time, but they can hardly have understood the significance of that which they saw. We, on the other hand, are privileged to draw upon the immeasurable stores of experience and suggestion which the centuries have handed down to us for the equipment of our study of contemporary events. Using our powers of analysis and discrimination, we see Canada's advent into self-government, self-consciousness, national dignity, and keen political vision; and, testing the phenomenon by the means which history has provided, we know that we are the witnesses of the birth of an Empire. The inference is not the less profoundly true because Canada is an empire within an Empire. It is but one planet of a system containing three other giant orbs revolving round a central imperial sun, which has not yet lost its power to fling new worlds into space, and to guide them in their regular orbits of prosperity and strength.

Looking at the birth of a modern empire, such as Canada, we are confronted with the changed significance of imperial

sway, as we understand it, in comparison with its original meaning. The early Asiatic empires stood for a personal and arbitrary despotism. Their successor, the Roman Empire, was an autocracy tempered by a legal system in many respects so admirable and so exquisitely adapted to the needs of mankind as to have survived 1,300 years of political cataclysms, and to be inextricably woven into the legal fabric of every Western civilization. This was Empire guided, defined, and restrained by law, but dependent for its existence upon the exercise of ruthless force, directed in a large degree to the holding down of subject populations. Finally, we have the third, the modern, type of Empire, that which is represented by the British Empire in the aggregate, with the Canadian Empire as one of the factors of the larger entity. It exhibits no personal despotism, no ruthless and resistless central power in a distant imperial city, but civic consent and co-operation applied, in the highest and most intimate sense of which the age is capable, to the art of government. It does not hold down a subject population, but rather holds up, by means of the self-respect that is born of conscious political responsibility, a people who became the most distinguished exponents of the art of self-government that the world has ever seen; a people in whom the maintenance of public order has become almost a native instinct; a people whose annual tribute is drawn, not from the hopeless toil of conquered races, but from a soil reduced to

fertile and exuberant subjection; a people which rises every year to higher levels of civic achievement; a people whose destiny as a people, and not as the subjects of a single despot or a governing caste, is magnificent beyond the rosiest visions even of our prescient and enthusiastic age.

But this Empire, which already plays so large a share in the beneficent activities of the world, is comparatively unknown and unexplored. We may say that we have scratched the surface of its resources, but we have scarcely gone further. Canada counts for nearly one-third of the British Empire, and it is larger in area than the United States. Exploration has been pretty thoroughly done in a belt of variable width roughly parallel with the international frontier. For the present we may say that the northern edge of the belt is represented by the Grand Trunk Pacific as it approaches Edmonton. Beyond that we enter the realm of the vague and the obscure. So truly is that the case that last autumn there were reports of the discovery of a new lake, larger than Lake Superior, in these vast unexplored northern regions. What vast stores of the means of human progress may lie hidden in these dim recesses, and what influence they may exercise upon the speed, and upon the scope, of Canada's industrial development, time alone can tell us. But when we consider the industrial development of the Dominion, let us bear in mind how comparatively narrow is the area which has so far been laid under contribution, and how immense is the territory which has not yet yielded its spoils to the dauntless armies of civilization.

As with the land, so with the dwellers in it. The people themselves are entering upon a period of evolution, of which none can foresee the end, or guess, more than dimly, what its course will be. No observant traveller in the Dominion can have failed to notice the distinct facial type which is being evolved among the native-born Canadians. It has some resemblance to the corresponding American type, though there is a difference palpable to careful observation, but indescribable by written or spoken words.

But the Canadian type itself carries the stamp of a resolute determination, combined with an intellectual alertness, though both these characteristics soften instantly into geniality when the more human emotions come into play. I have never yet seen any adequate explanation of this development of a distinct facial type by a people which is, politically speaking, so young as the Canadians. But I have seen the conjecture hazarded that the air, the climate, and the temperament must inevitably impress upon a white race the same physiognomy as they did upon the red; and there is, in fact, a striking resemblance between the facial contour of the full-blooded Canadian and that of the best specimens of the native race. Professor Masterman has suggested that the incessant struggle of our Teutonic ancestors with the hostile meteorological elements made them into a debating race, and so gave us the legislative system which is the foundation of liberty in all the Saxon and Celtic lands. Possibly the consciousness of the possession of a civilizing power which has transformed wide wastes into one of the granaries of the world may be responsible for the firm lines and the candid expression which combine in the Canadian facial type.

These considerations bring us face to face with one of the absolute essentials of industrial development, to wit the existence of an intelligent and adequate population. The most fertile of countries cannot prosper if there is no population to raise the tribute from the obedient soil. To give you the figures of the population of Canada would probably be a superfluous task, but let me invite your attention for a moment to the magnitude and the character of the immigration which is going on in the province of Alberta. In 1896, 4,451 persons arrived in the province from Continental Europe. In 1906 the figure had risen to 56,000, in 1907 to 83,000, though in 1908 it went back to 34,000. Into the same province in the year 1897 there arrived from Great Britain 11,283 immigrants. In 1906 the figure had risen to 120,000, in 1907 it was 84,000, and in 1908 it was 52,000. In the year 1896 the immigrants from the

United States into the Province of Alberta numbered less than a modest train load. They were forty-nine persons, to be exact. In 1909 the aggregate had risen to 103,000, and for 1910 the total is estimated at 150,000. These latter figures relating to immigration from the United States will, of course, suggest other considerations than those which are merely concerned with the increase of population. To some of these I shall allude at a later stage. At this moment it may suffice to say that although a few months ago I made exhaustive enquiries from many sources in Canada itself with regard to the possibility of the swamping of British sentiment by this tide of immigration from the United States, I could find little or no opinion confirmatory of any misgivings on the subject. The general view was that the American who crosses the international frontier, and settles down upon Canadian land, very soon becomes almost more a Canadian in sentiment than the Canadians themselves. Perhaps that only goes to confirm what is now practically a maxim of political science, viz., that if an intelligent person seeks to improve his lot by moving from his own country and settling in another, he will, provided the experiment be satisfactory in the matter of his own prosperity, very soon merge himself in the life of his adopted country. He may even consider himself insulted if it is suggested that any trace of his original allegiance or nationality remains dormant in him. It would be easy to quote confirmatory examples from our own history during the last thousand years.

If we pass from land and folk to ask what political machinery they possess to aid in the erection of their great Imperial edifice we shall discover that there is a provision in the Canadian Constitution which is of the most vital importance to sustained and vigorous political and industrial development. As a rule an inquirer into the industrial prospects of a given country would not turn to its Constitution for the illumination of the subject. But the Canadian provision is quite exceptional and is destined to have a very

far-reaching effect upon the industrial future of the Dominion. The Constitutional element to which I refer is that which provides for the automatic redistribution of electoral power in accordance with population. At present the balance of power lies in the thickly populated Eastern Provinces—Ontario and Quebec—but the increasing advent of settlers to the West is destined in time to turn the balance of control in favor of Manitoba, Saskatchewan, Alberta, and British Columbia, so that at no distant date in all probability the sentiment of these Provinces will weigh very heavily, if not predominantly, in the Federal Legislature. I am quite aware that this change will raise questions which are outside the domain of industry and finance. These I could not possibly discuss without entering upon controversial ground. But it is permissible to say—and I think the proposition will be accepted—that in the view of modern political science the first condition of sound and progressive industrial prosperity is the ability of the industrial population to impress its views upon the administration, and to be conscious of its own political authority when it is doing so. It is permissible to remind you that the policy of our Government in this country is profoundly and decisively influenced by the opinion of the great industrial centres. There is reason to believe that such industrial unrest as exists arises, in some degree at least, from the fact that the distribution of electoral power has, owing to the lapse of time since we had a redistribution of seats, run out of adjustment to the distribution of industrial population. This gives us such gigantic anomalies as the sending of one member by the city of Durham, with an electorate of 2,600, and the similar sending of one member by the constituency of Romford, with an electorate of over 50,000.

These conditions, with the corresponding consciousness of political authority and aspiration which are dwarfed and stifled by the lack of adequate means of expression in the national Legislature, will never threaten the industrial development of Canada. The automatic redistribution of seats every ten years will

constantly bring population into line with legislation, and will give to the great industrial centres the voice to which they are entitled in the councils of the Dominion. This is an aspect of the Canadian Constitution which, so far as I know, has not been adequately discussed and appreciated on this side. Canadians themselves are fully alive to it. The discriminating traveller to Canada by one of the great Transatlantic steamers which steer for a Canadian port will distinguish three groups among his fellow-passengers. He will find his brother Briton, on pleasure or business bent, full of enthusiasm about the prospect of seeing the new British Empire in the West. He will chat with another class when he encounters the homeward-bound Canadians, who flock to Europe in ever-increasing numbers every year. And from this, the Canadian contingent among his fellow-travellers, he may expect a hint not to overlook the third class (mainly emigrants, with multitudinous boxes and bundles bearing the legend "settlers' effects"), since by them the Constitutional foundations of the coming Canada are to be broadened and stability assured. A new constitutional balance is to be created by the growth of political power in the provinces westward of Ontario—in Manitoba, Saskatchewan, and Alberta, for instance—which will be independent of the forces that dominate Quebec. I am, of course, as I have already said, merely pointing to a political phenomenon and to its scientific, as distinguished from its partisan, significance. With the latter aspect I have nothing to do in the present discussion.

These brief and general preliminary considerations may pave the way for my plea that the industrial development of Canada, treated as a whole and in detail, cannot be brought within the narrow orbit of a single paper or a single evening. Let us therefore take a few of the outstanding features, and employ them as criteria for the rest. If, for instance, we are entering Canada by the St. Lawrence, we are instantly in the presence of one of the most powerful factors of Canadian prosperity, the river itself. On our right, stretching away into the unknown north, is the forbidding coast of

Labrador. This is not strictly Canada, but the attempt to develop such resources as it possesses (vast forests of spruce, for instance) is now about to be made, and must have its indirect results for Canada. Further up the Gulf of St. Lawrence are the long, low shores of the island of Anticosti. This is being developed by a private proprietor, M. Menier, of chocolate fame; but it forms no part of the Canadian industrial system. Still advancing, the rocky peninsula of Gaspé rises on our left. This has gained some prominence in recent years in consequence of the alleged promise of its oil-fields, as well as from the fact of its including the terminus of the railway whose construction brought the Charing Cross Bank to ruin. From this point onwards to Montreal we are in the mighty highway of the St. Lawrence, which is destined, as time goes on, to be more and more thickly crowded with the vessels of all nations. The single but tremendous drawback to its prosperity is its closure by ice during the winter months. Accepting it as irremediable (which we must do), there is nothing but praise for the stubborn enterprise which maintains other ocean outlets, and defies even the vigour of the Canadian winter in so doing.

The development of the St. Lawrence itself as a great Colonial waterway has in recent years taken place to an extent which is hardly suspected on this side. Only recently Major Stephens, the President of the Montreal Harbor Commission, said that, with regard to the port, no less than \$22,000,000 was invested, and that seven months' trade had aggregated \$200,000,000. There was, he added, only one port on the North American Continent which did a bigger business than Montreal month for month, and that was New York. There is only one port in the United Kingdom, after London and Liverpool, that exceeds the average monthly trade of the port of Montreal. The trade of the port of Montreal during seven months of the year averages one and a quarter million dollars a day, exports and imports. Fifteen years ago the tonnage of the largest boats calling at

Montreal was 6,000, ten years ago 10,000, today 15,000, and ten years hence it is considered probable that it will exceed 25,000 tons. Proceeding to elaborate these striking facts, Major Stephens said that every dollar put into the St. Lawrence would come back in added prestige to Canada. If the St. Lawrence route ceased to exist, the cost of haulage from their wheatfields to the ocean on the four million tons at present carried by water would be \$4,000,000, instead of \$400,000 as at present. The port of Montreal owned thirty-two miles of river front, and had no land or property owners to buy out when extensions and improvements were required. Comparing the American and Canadian routes, Major Stephens showed that by shipping by the St. Lawrence via Montreal to Liverpool there was a clear saving of four days coming and going as compared with the New York route. From Oswego to the sea took fifty-four hours. From Prescott on the Canadian side to the sea took only seventeen hours. This advantage was not enough to insure Canada against serious competition in the transportation of her vast trade. They had an advantage of 500 miles over their American rivals from the St. Lawrence to Liverpool. To maintain this supremacy the work of completing the St. Lawrence to a depth of 35 feet is to be carried on vigorously, and already some of the work is done. Two large dredgers are employed below Quebec, and seven above, and others will be laid down in view of the important work that remains to be done. In five or six years' time the channel will have a depth of 35 feet from Montreal to the sea, and will consequently represent one of the most potent instruments, as well as one of the greatest triumphs, of Canadian industrial development.

This eastern end of Canada between Quebec and Toronto, served largely by the St. Lawrence, is far advanced in commercial development, as all the world knows. In railways, tramways, lake and river transport, manufactures, and all the indications of enterprise and prosperity it affords abundant material for economic study. But the observer will not

have considered it long before some interesting inferences will make their appearance, and some equally interesting sub-problems will thrust themselves upon his attention. The most interesting is the question whether the Official List of the London Stock Exchange represents anything like a large proportion of British investments in Canada. Mature consideration and inquiry suggest that it does not. The Official List total is immense. It includes the bonds of the Dominion Government itself, the various provincial governments, the municipalities, the railways, and many other powerful borrowers. The experience of the last twelve months has shown that scarcely a week elapses without a Canadian appeal, of some kind or another, for the co-operation of British investors. During the year 1910 the total Government, corporation, and municipal borrowings amounted to \$215,338,500 (£43,067,700), as compared with \$240,000,000 (£48,000,000) in the previous year. The distribution of bonds was in the proportion that Canada herself took 17½ per cent., the United States 5 per cent., and Great Britain 81½ per cent. The expenditure on railway construction for the year was estimated at \$50,000,000 (£10,000,000). But all this class of investments must be made in the open, and all are, by their very nature and mode of existence, part of the immense mass of marketable securities. They constitute the obvious, the palpable, side of Anglo-Canadian financial relations.

There is another and very striking aspect of this question. A few months ago I crossed to Canada on a Canadian Northern liner, as a member of the usual well-assorted company that studies constitutional problems by pacing the promenade deck. Very slight intimacy with my fellow-passengers showed me that there were people on the boat who were going to Canada as the representatives of large British interests, for the purpose of placing considerable sums of money there; and at least two of the passengers were men in early middle age accompanied by their families, who had "closed down" their lives on English soil, and were on their way to start afresh in the

new country on the other side. One of these men could count upon resources running well into five figures. He felt so easy about his Canadian future that he proposed to travel over there for some months before arriving at a final decision as to a place of settlement or a means of employing his money. Facts like these stimulated a train of inquiry which led me to some of the most authoritative sources of information in the Dominion. In that way I obtained the most complete confirmation of my own inference. I found myself, at the same time, in the presence of a polite but insistent reticence; but no secret was made of the passing of huge sums, by indirect and impalpable means, into Canadian investments. The money comes from the large rather than the small investor. The active participants include several of the crowned heads of Europe among their number, as well as a long list of leaders of finance on this side. The profits have in practically all cases been large; in some surprising, in some colossal. Yet the whole process is going on so unostentatiously that the majority of Canadians themselves are unaware of it. The Canadian Ministry is fully persuaded that the flow will continue. In Canada there are already large organizations devoted to the work of placing the capital of influential European clients. The utmost skill, the most searching scrutiny, are devoted to the task. Every point where the money of the clientele has been placed is watched—not by the means of the study of written reports, but by the constant personal visits of expert observers. Canada is jealous of her reputation among investors, so much so that the best Canadian opinion (and I say it on the very highest direct authority) welcomes that which is coldly and incisively critical in preference to that which is optimistic without discrimination.

You will have noticed, doubtless, that the president of the Bank of Montreal recently spoke strongly on this very subject. At the annual meeting of the Bank in December, he said: "Important transfers of money to this country are of daily occurrence, and especially from

England, where political and financial unrest has induced many people to seek new avenues for investment. Contributions through the Stock Exchanges and money markets of Europe to the financial enterprises of Canada have been extremely generous of late, and it is eminently desirable that the confidence thus displayed should not be abused. Some offerings have been made, it is feared, by over-sanguine promoters, whose statements it would be hard to justify, and in relation to schemes where the advantages to buyers are not quite apparent. It might be well to consider that, while money seeking investment is much more abundant in some countries than it is with us, there is seldom much lack of capital here for participation in enterprises that are unquestionably sound. Our friends abroad might reflect that a home market, especially in the case of industrial securities, will generally furnish some indication of values."

No sooner are we in the eastern provinces, with our faces towards the west, than we are forcibly reminded that the first-fruit of British capital at work in Canada was the Canadian Pacific, the most powerful of all the factors at work in Canada's industrial development. It has been said that the Canadian Pacific is much more than a railroad. The Canadian Pacific is, in truth, much more than Canadian. A traveller may leave the Mersey and go all the way to Japan without being for a moment out of the hands of the C. P. R. His steamers, berths, food, trains, and hotels are all C. P. R. The steamers, whether ocean or lake boats, rank among the best, and when he is on the C. P. R. itself the traveller will be whirled along behind locomotives which look like "Dreadnoughts" on wheels, in cars which dwarf into insignificance the finest corridor coaches of the British lines. Facts like these impress upon even the most casual observer the truth that Canada is a land of immense industrial enterprise and magnificent distances. Neither the one nor the other is realized at home. The idea in Great Britain, for instance, is that the C. P. R. is a railway company, whereas the construction and manage-

ment of railways are only items in a programme which extends to hotels, steamboats (transatlantic, transpacific, coastwise, lake, and river), grain elevators, land sales and development, irrigation, timber, immigration, the building of rolling stock, and fifty other elements, each of which is a big business in itself. As for the magnificence of the distances, a British manufacturer who was recently asked to quote a Winnipeg house for a large line of goods asked them to call upon his Montreal representative some morning. He did not realise that the morning call would involve a journey of 2,000 miles! It is a tremendous testimony to the soundness and thoroughness of Canadian industrial development that these distances have been conquered, so that they have ceased to be more than formal factors in Canadian enterprise. So rapid and so thorough has the work been that it is practically the record of the last forty years only. Within the last fifty years, at all events, a missionary who desired to transport his furniture from Toronto to Hudson's Bay was compelled to send it via Liverpool—that is to say, across the Atlantic and back—owing to the entire absence of other practicable conveyance.

Only close inquiry suffices to reveal the immensity of the influence upon Canadian industrial development wielded by the C. P. R. and the other great Canadian lines. Where, for instance, the C. P. R. can encourage the raising of peaches by the building of special stores for the product, and by the provision of elaborately designed means of transit for this most delicate of fruits, the capital is at once provided, and the whole scheme carried out on scientific lines. The C. P. R., in plain English, is the great driving force of the Canadian West. The Dominion Government at Ottawa hardly looms so large amid the national mechanism as the giant force which Sir Thomas Shaughnessy, aided by a unique group of skilled vice-presidents, controls from the C. P. R. centre at Montreal. In saying so much it would be obviously unfair to ignore the other Canadian roads, like the Grand Trunk Pacific and the Canadian North-

ern. Each of these, in its own special sphere, is developing fast along the lines which the C. P. R. has shown to be safe and suited to the country. But neither is, as yet, a transcontinental line, though the Grand Trunk Pacific is moving rapidly in that direction, and is opening up a country of immense fertility and promise. Within its existing eastern sphere the Grand Trunk vies with the C. P. R. in luxury, punctuality, and enterprise. And behind all these great roads there is a political inspiration. I do not mean for a moment that they busy themselves with Canadian party politics. It is the Imperial, not the national or the local, sentiment which ultimately (and now and then perhaps unconsciously) inspires their policy.

To begin with, the railways have brought Canada into being. Without them the vast domain which we are proud to call the Canadian Empire would have remained a mere loose aggregate of scattered agricultural communities. Quebec and Alberta must have known as much of each other as do Donegal and Kamtschatka. A strong central administration, inspired by Imperial sentiment, controlling a huge revenue, enjoying pre-eminent credit, and able to contemplate the maintenance of a navy and army of its own, must have remained an idle dream, an impalpable phantasy of enthusiastic patriotism. If such conditions of enforced segregation had existed there can be no doubt that the bonds of union, which now stretch east and west in unbroken continuity, would have tended in another direction. They would have lain north and south, and the Stars and Stripes would by this time have flown over the citadel of Quebec. I say it with no suggestion of reproach to the great democratic experiment which is being carried on under the Stars and Stripes. But for this audience it is a supreme gratification that another flag flies, and is destined for all time to fly, over the proud city at the junction of the St. Lawrence and the St. Charles.

A few thousand miles of steel rail, spiked to the endless succession of "ties," have saved Canada for the Empire. Not only have they done so much, but every year they draw the Dominion into closer

cohesion as a self-governing unit, while at the same time they cement it more firmly into the Imperial fabric. A good instance of the kind of work that is being done can be furnished by taking a sudden leap of a few thousand miles to the West for a brief consideration of the relative position and promise of the two provinces of Alberta and British Columbia, on either side of the Rocky Mountains. Neither of these provinces has so far realized the boundlessness of its resources. The wealth of Alberta is mainly above the soil; that of British Columbia (with the exception of timber and fruit) principally below. In other words, Alberta is mainly an agricultural, dairying, and ranching province, while British Columbia's wealth lies to a very large extent in her minerals and in her facilities for transpacific trade and transport. Without the railways the giant barrier of the Rockies would have maintained these two provinces in mutual isolation, if not in something like mutual ignorance. As it is, each is the commercial complement of the other. The mineral products of the one will be exchanged for the food products of the other, with the result that an ever-growing volume of inter-provincial trade will be brought into being. The railways, which began by tying rail to rail, will end by tying province to province, people to people, in bonds which no power on earth can rive asunder.

As an example of a city laid out for posterity, Winnipeg holds pre-eminent place. The enormous width of the streets, and their arrangement so as to secure the maximum of speed and convenience for the traffic, offer a model which might well be imitated throughout the Canadian West. Today it is the third city in Canada. It has completely out-run all the most daring and roseate prophecies about its future. It is, in fact, impossible for its municipal organizations to keep pace with the development of the area which it controls. One of the chief questions is the provision of a new water supply. A few months ago I was discussing the financial aspect of the matter in Winnipeg itself in the course of a lunch at the Manitoba Club, and the opinion was expressed that £5,000,000 might be

wanted to deal effectively with the task. Speaking with some knowledge of the proclivities of the British investor, I suggested that he would be perfectly willing to provide the money "at a reasonable rate," so that Winnipeg need entertain no misgivings about obtaining any financial aid which it may require for municipal equipment.

I said that Winnipeg was the third city in Canada. The first and second places are held by Montreal and Toronto, which, in comparison with their Western sister, are hoary centres of commercial activity. And they will grow, but I doubt if they will develop at the same pace or to the same degree as Winnipeg. They have not the same immense potentialities in that they are not the natural and inevitable centres of the destined commercial activity of the world's greatest grainfields. The west-bound railway systems converge upon Winnipeg from the east, and burst into innumerable ramifications westwards over the fertile provinces of Manitoba, Saskatchewan, and Alberta. The C. P. R. at this moment has over 110 miles of sidings in the Winnipeg depot. The Grand Trunk Pacific and the Canadian Northern have erected a magnificent new union station of their own. All these resources, and many more, are going to be taxed to the utmost of their power, and beyond it, as the three provinces of Manitoba, Saskatchewan, and Alberta break into their full stride and realize their full productive capacities. There are but three possible outlets for the products of these provinces. They can be carried eastwards, or westwards, or southwards. But the westward route leads over the Rockies to the Pacific, and is open to innumerable objections from the point of view of cheap and rapid transit. The southwards route must pass the international border into the United States, and is ruled out by Canadian and American sentiment alike. The eastwards route alone remains, and every inch of it leads to Winnipeg.

It can, in truth, lead nowhere else. The Red River City has captured the point of vantage at the junction of the Red River and the Assiniboine, and nothing but a geological cataclysm can snatch it

from her deft and capable hands. It may be taken for granted that Winnipeg has become conscious of her destiny. The awakening has produced its inevitable fruit in the shape of a desire to be independent of eastern guidance and control. Till now Montreal and Toronto have been the financial inspiration of Winnipeg. They have found the money and chosen their own financial policy in its employment. They have worked well and wisely, and Winnipeg herself knows it. All the same, the time has come when dependence upon Montreal and Toronto hurts the native pride of the Western city. She wants to do things in her own way and with her own money. The careful inquirer will not discuss the matter long on the spot before he will be convinced that she intends to do it, and that pretty soon, too.

Passing from these broader surveys to more of the detail of the structure, let us glance at some of the actual working components of Canadian prosperity. There is no surer index than the spread of banking facilities. If this test is applied to Canada the results are at once striking and convincing. Forty-five years ago there were twenty-six chartered banks in Canada, with a paid-up capital of \$30,000,000. According to a summary recently published in the "Monetary Times" there were in Canada at that time 120 branch banks at fifty-five places in Ontario and Quebec. At the present moment there are no fewer than 2,331 branch banks spread over the area of Canada (including Newfoundland). The banks which maintain this gigantic aggregate of banking facilities for the benefit of the business public have also opened thirteen branches in the United States, five in England, two in Mexico, and one in Paris. Not the least significant factor of this exhibit is the existence of 272 bank agencies in Saskatchewan, and no fewer than 189 in the comparatively recent province of Alberta. If we were under the impression that bankers were primarily philanthropists, we might fail to appreciate the full force of these statistics. But as we are all well aware that the banker only goes where he sees or expects to create busi-

ness, and that he has a very keen eye for opportunities, we may say that the very existence of this immense number of bank agencies is itself a conclusive demonstration of the tremendous industrial development of the Dominion. The total deposits in the Canadian banks at the end of June last were £156,000,000; the total deposits of the English banks were £735,000,000. On population they should be six times as great as the Canadian; but they are in fact only four and a half times. Let me add that to the observer of Canadian development and progress none of its recent phenomena has been more interesting and more welcome than the advance of Canadian capital into foreign fields. Canadian enterprise in Mexico and in South America is now so well developed that the various undertakings stand in a recognized class by themselves. In other words, Canada has commenced her career as a creditor nation, and is on the highway to create for herself a miniature of that immense inward flow of the revenue of invested funds which is so colossal a factor in the prosperity of Great Britain.

Canada carries on business with no fewer than seventy-two countries. In 1900 she sent us \$2,718 worth of paper. In 1910 the figure was \$912,524. The wheat crop of the Canadian West in 1909 was nearly 120,000,000 bushels. The amount of property insured against fire in Manitoba, Saskatchewan, and Alberta is \$3,798,028. The Customs collections in November last were \$6,024,781, an increase of nearly \$1,000,000 on the same month of 1909. Canada's railroad mileage is over 24,000, an increase of 854 per cent. in forty years. Canada's fisheries are now producing about \$30,000,000 a year. The mineral production of the province of Ontario alone for the first nine months of the past year was nearly \$20,000,000. But to pass in review every one of the available aggregates of the evidences of prosperity would mean an all-night sitting. Let me wind up with the statistics of the single business in which, from one point of view, Canada's share is declining—I mean the egg trade. In 1902 Canada exported 11,635,108 dozen eggs. Now

her population has grown so large and so luxurious that she consumes all that are produced, and has practically ceased to export eggs at all.

Finally, over and above all this bounding prosperity, there is the single, luminous, all-pervading fact that is Imperial. In Canada nobody of importance dreams of any breach of the Imperial compact, of any interruption of the process of weaving the Dominion as a miniature British Empire into a majestic design which the rolling centuries and a brave and patient ancestry have outlined for us, their too ungrateful successors. All over the Dominion and the Dominion seas (fresh or salt) the British flag is overwhelmingly—I had almost said aggressively—a feature of the landscape and the seascape. The man who would be so rash as to propose its replacement by the star-spangled banner would have about five minutes in which to make his

choice between a strait-waistcoat and police protection. It is a tremendous political and social phenomenon, this Dominion. Taken altogether, I doubt if the northern half of the globe offers its parallel as a contemporary specimen of political architecture on a gigantic scale, where the stones are British citizens and the cement is industrial prosperity and steel rails. And yet we, who see it now, see merely its earliest beginnings, and can form no real idea of the magnificence of the completed structure which will greet the eyes of posterity. If we, here upon this bank and shoal of time in the year 1911, could be permitted a momentary glance at the Canada of the year 2000, I doubt if our noblest conceptions of liberty and prosperity would be adequate for a proper intellectual grasp of the magnificent picture which would be unfolded to our eager eyes.

A Word About Slocan, B. C.

A CORRESPONDENT at Slocan City, B. C., calls attention to that beautiful spot in the following communication:

"Anyone passing through Slocan, giving a casual glance down the straggling main street, has no idea of the magnificent natural resources it possesses. The site is perhaps one of the finest in the Kootenays, situated as it is at the junction of the Slocan River and Lake, with enough level land for the development of a large city, bordered on two sides by the lake and river, and on another by the beautiful Springer Creek, with its rushing falls, which would supply sufficient power and light for the town and the ranches in the valley. Slocan City has a daily train, and there is also a boat twice daily. In winter, traffic to the coast passes this way, as the Slocan Lake never freezes.

"Go either down the broad river or along the excellent wagon road, and notice the tracts of land waiting to be taken up—land, too, of the best, gently sloping to the river, well watered, and admirably adapted for orchard culture

and easily cleared. There, too, you will find ranches, in their infancy it is true, but planted with healthy-looking young trees, testifying to the productiveness of the soil. The trees now in bearing show large yields and the fruit is of excellent quality.

"The Slocan Lake and River compare favorably, for scenery and sport, with any in British Columbia. Take a launch, run up the west side of the lake; notice the lovely sandy shore and snug little harbors so inviting to campers; stop and catch enough trout for lunch at one of the many creeks; cross over and return by the east side, with its frowning bluffs and rocky shore, softened in places by silvery falls, and I am sure that for such beauty and variety of scenery you will have to go far. There is a good rainfall, and although in winter there is a quantity of snow, the thermometer rarely drops to zero, and there is no wind. There are still large tracts of first-class land to be taken up between Slocan City and Lemon Creek, near to the railway and the wagon road."

Editorial

RECIPROCITY

THE reciprocity agreement recently entered into by representatives on behalf of the United States and Canada, and which at present writing still awaits ratification by the governments of these respective countries, is perhaps the most outstanding subject of public and private discussion on the North American continent today, if not throughout the English-speaking world.

Before attempting to discuss a subject of such vital importance to the two high contracting parties, and of more or less significance to other neighboring nations, it is necessary that we should recognize certain incontrovertible facts as a basis of operations.

In this case our hypothesis shall be the presumption that Mr. Wm. Taft, president of the United States, and Sir Wilfrid Laurier, premier of Canada, and their immediate associates in these negotiations are honest men, having the welfare of their respective countries at heart and a due appreciation of and respect for the national independence and laudable ambitions of self-governing and self-respecting branches of a parent vine.

This being the case, any duplicity discovered in the conduct of either of the parties to the agreement should result in the defeat of the very object of the negotiations, viz., closer and more rational trade relations between the two countries.

While we propose to note particularly the probable effect of this new tariff arrangement on the fruit industry from a Canadian national standpoint, a few general remarks by way of introduction may be in order. While the agreement as a whole would seem to be a fair bargain between the two countries, it is not an equitable adjustment as to advantages and sacrifices in respect to the chief interests. While raw materials and natural products form the major portion of the free list agreed upon, it will be observed that only slight reductions of the duty on

manufactured articles are proposed in most cases, and it requires the most diligent search to find the few of these included in the free list. The only inference which may be drawn from this fact is that the manufacturers on both sides of the international boundary still have the governments by the throat and are dictating their own terms. Free machinery would do the farmers of both countries as much good as the free exchange of natural products, but the powerful "infant industries," whose operators have become financial princes at the expense of the consuming public, must still be spoon-fed, while the "backbone" of the country bends under the crushing weight of abnormally high prices paid for manufactured articles. If an "infant industry" like the Massey-Harris Company, whose walled cities have become moss and ivy-grown with age, cannot now compete in their home market on the same terms as they meet their rivals in foreign fields, it is high time that the Canadian farmer knew just how long it takes to establish a manufacturing industry on a sound basis, and whether the game is worth the candle.

Something like ten years ago Mr. A. B. Petrie commenced the manufacture of cream separators at Guelph, Ont., notwithstanding that these machines were then and have been ever since admitted into Canada free of duty. About six years ago he had a fire loss of about \$100,000, after which he removed to Hamilton, and is today manufacturing and shipping cream separators by the carload in open competition with the manufacturers of the United States, and the concern is prospering in a most satisfactory manner. If it is not time to take the nursing bottle away from the manufacturer, surely it is pretty nearly time to put a nipple on the other end of it and give the farmer a square deal.

Granting that reciprocity is a good thing, why should the farmer and the horticulturist be chosen to bear most of

the burden of sacrifice in making the experiment? The manufacturers claim that they have a capital invested in Canada of \$1,200,000,000, that their annual output is \$1,000,000,000, and paying in wages \$250,000,000 to 435,000 workmen. But these figures would look small when placed alongside of those representing the agricultural interests of the country, and yet the manufacturer, through the professional politician, jollies the farmer into supporting a high protective tariff for the privilege of looking at tall chimneys and paying two prices for his machinery.

Objections to this reciprocity agreement seem to be about as numerous on one side of the international boundary as on the other, and most of them seem to originate with the producers or their agents. In dealing with the fruit question, it must be remembered that we endeavor to serve the best interests, not only of the fruit-grower and the fruit-dealer, but of the fruit consumer as well—a class who seem to have been almost completely lost sight of in the partisan discussion of this question. The Canadian fruit-grower will probably have to sacrifice more, with less compensating benefits, through the ratification of this agreement than any other class, and when fruit was placed on the free list the machinery, boxes, spray materials and other articles used in its production should also have been admitted free. But while the even tenor of the fruit-growers' way is going to be somewhat disturbed, we cannot agree with the calamity howlers that the industry is going to the everlasting bow-wows.

But one thing is certain, that the Dominion Government will need to be just a little particular about the class of men whom they employ as fruit inspectors, and the provisions of the Inspection and Sales Act, Part IX, will need to be enforced more rigidly and intelligently than they are at present, not only with reference to export fruit, but also to imports and domestic trade. The weak spot in the administration of the Dominion fruit regulations is the fact that special attention has been given to export trade to the neglect of the domestic and that coming from outside the Dominion. We rightly claim to have the very best quality of

fruit, and if high standards were maintained in the grading, packing and quality of packages for domestic trade all over Canada the imported article would not be in demand while our own lasted. All imported fruit should not only be subject, but subjected, to the same rigid inspection as to quality and size of packages, and not a single package should be permitted on sale which has not been previously marked with the name and address of the importer, the name of the variety and the grade. Then if the Canadian fruit-grower cannot hold his own—and we still have cheaper fruit lands and better fruit than our neighbors to the south—it must be his own fault. There can be no doubt that the fruit season will be much extended both north and south, as in return for the early supply from the south the Canadian may prosecute the sale of his later and better fruit in the United States after their growing season is over. This should be a great advantage to the general consumer. It should not be necessary to inflict an injustice on one in order to bring a compensating profit to another. If fruit is not now produced as cheaply in Canada as it is in the United States it must be a question of methods, and we have still something to learn from our neighbors.

The British Columbia fruit-grower will be exposed to the keenest kind of competition from the south in his own local and the prairie markets, but with a little readjustment of freight and express rates and a little readjustment of himself and his methods, with a vigilant Dominion and Provincial inspection, we are satisfied that he can hold his own with all comers. Ontario and Quebec should enjoy a fair reciprocal trade with the neighboring states, while New Brunswick, Nova Scotia and Prince Edward Island should greatly benefit from the markets of Boston and New York. Good, clean, well-put-up fruit will always be in demand, and any slight modification of prices which may result from the free exchange of fruit products across the border will be more than made up through better facilities and increased consumption.

Surely Canadians are not prepared to admit that they can be beaten in a square

game. If so, they are unworthy of the heritage of a great country over whose destiny they are called upon to preside. If the Imperial federationists have nothing stronger to offer in binding the Empire together than an artificial trade preference, their strength is measured by the treacherous cords of human selfishness which never bound a true patriot, and if this proposed reciprocity agreement shatters their hopes, they are surely treading on dangerous ground. It is the merest drivel to say that this movement shall decide whether Canada is to remain an integral part of the British Empire or become a unit in the United States, and we find it hard to command language sufficiently strong to express our disgust and impatience with those who cannot see a higher destiny for this great Dominion than either one. While we will not tolerate very much interference in our national affairs from Downing Street, we simply will not stand any from Washington. It takes no brilliant prophetic vision to see that the time is fast approaching when the English-speaking, if not all white, nations must combine in a strong offensive and defensive alliance for self-preservation and the peace of the world. While Canada is bound to the Mother-country by the strong and enduring ties of sentiment, she is rapidly developing into a powerful self-reliant, self-governing, independent nation, and is destined to play a most important part in the formation of a sane and equitable friendly alliance between all other English-speaking peoples.

Many of the best citizens of Canada are to be found among those who came from the United States and quickly learned to admire our national institutions, our administration of justice and the general enforcement of law and order. As Dr. Elliott S. Rowe says: "In theory they have been taught from their mother's knee to love liberty and the blessings of a thoroughly democratic form of government, and come here to enjoy the realization." What we want are men and women who will be loyal and true to Canada, and in so doing they must be true and just to the Mother of Nations and to each of her children. If our coun-

try justifies our boasting, and if our people have the qualities we claim for them, every self-respecting Canadian should blush to hear the pessimistic carpings of those who are unfit to occupy a position of importance in the public affairs of a great, free, enlightened and self-governing people. If we do not have confidence in ourselves, how can we expect to command the respect of the outside world. The United States has quite enough domestic problems to keep her busy during our growing time, but should the Fourth of July spread-eagle element get temporary control and be indiscreet enough to attempt to force Canada into submission, they would find the warmest job on their hands they ever tackled. But the best element in a nation, though in the minority, usually rules, despite fire-eating politicians, and that being the case the peace of the English-speaking world is assured.

Let the British preference be continued and increased if we get any compensating response; let the reciprocity agreement be tested and enlarged if found to work to our mutual benefit, and if not let there be a cordial exchange of notices at the line fence, bid Uncle Sam a pleasant good day as he turns again to plough his own commercial furrows, and Johnnie Cannuck whistles the "Maple Leaf" as his ships depart east and west to all parts of the commercial world.

Before we quit this subject there are two men who are entitled to some attention, viz., Geo. E. Foster, of Ottawa, and Champ Clark, of Washington.

Many of us remember with what burning eloquence Mr. Foster denounced the British preference when it was first introduced, as calculated to ruin Canadian vested interests, and now he is just as loud in his demands for more of the same nostrum and the abandonment of the proposed commercial agreement with the United States. We wonder what a supremely delightful sensation it would produce should Mr. Foster tell the truth once.

It is said that when Champ Clark, Democratic leader, speaking in support of the reciprocity agreement at Washington, expressed the belief that the Ameri-

can flag would yet "float over every foot of British North America," it brought the members of the house to their feet with cheers. We are sorry that the members of the house at Washington displayed such supreme ignorance and bad taste as to be carried away by Mr. Clark's impertinent presumption, but it is about Mr. Clark's attitude that we wish to say a word. We do not incline to the popular belief that Mr. Clark was only joking, but that he did it deliberately as the result of a cunningly devised scheme to embarrass Mr. Taft's administration. If, on the other hand, he was honest and meant what he said, the United States Congress may take credit to itself of having slain a multitude of conscientious supporters of reciprocity with the "moist jaw-bone of an ass."

Then when we behold, not in anger but in pity, representative Bennett introducing a bill at Washington asking for "Canadian annexation negotiations with Great Britain," we are transfixed with amazement as we contemplate the simplicity and cupidity of some men whom the fortunes of political warfare thrust into positions of making fools of themselves. Does Mr. Bennett not know that should Great Britain attempt (which is impossible) to negotiate for the annexation of Canada to any other country she would be met with this country's first flat refusal to honor the compact? The people of Canada must be the first to be consulted with reference to the future disposition of their country. There is just as much likelihood of them agreeing to be annexed to China or Japan as to the United States, and a great deal more probability of the annexation of the United States to Canada than either one. So let the bragging politicians and the calamity howlers cease their clamour and allow sensible people to pursue the peaceful walks of life.

Canada, as a nation, is quite capable of conducting her own business and taking care of herself. She is not likely to adopt a national flag which does not have the Union Jack in its makeup, and may be trusted not to stultify herself by dishonoring the Motherland, to whom she is bound by an inspiring and ennobling

sentiment which shall outlive the changing evolutions of commercial and political developments.

* * *

CANADIAN NATIONAL APPLE SHOW

WHEN the First Canadian National Apple Show was held in Vancouver, B. C., last fall, it was conceded that in justice to Eastern Canada, and to carry out the national character of the enterprise, the show should be held two or three years in cities like Toronto, Ont., Montreal, Que., and St. John, N. B., or Halifax, N. S., before being again pulled off in British Columbia.

The eastern people seem to be hesitating about where the show should be held this year, or whether it should be held this year at all or not. If they have any notion that they can wait till they see a good fruit crop in sight, and then rush a National Apple Show together in a few months, they will court an inexcusable failure; and to let a single year go by without holding the great National Apple Show in some one of the fruit-growing provinces of the Dominion is a mistake which the fruitmen can ill afford to make.

The "Canadian Horticulturist" says:

"The directors of the Ontario Fruit-growers' Association have decided not to attempt to hold a National Apple Show for the east next fall. The intention is to hold the show in the fall of 1912. In some ways it is disappointing that the show will not be held this year. British Columbia made a success of its show with less than a year's effort. On the other hand, the people of the east are not as familiar with the holding of these monster events as are the people of the west, and therefore may require more time to organize properly.

"The delay means that more will be expected of the show when it does take place. For this reason preliminary organization work should be started forthwith, otherwise much of what it is hoped to gain by the delay will not materialize. If the event is to be made a credit and a benefit to the east it must be

conducted on very broad lines. This means that time for preparation must be used carefully and wisely.

"From now on every fruit-grower in Ontario and Quebec should keep the holding of this great show before him and plan his work accordingly. He should study to see what he can do to aid it and what benefit can be made to him and to his section."

After discussing the question with prominent fruitmen in British Columbia we are prepared to say that the west wants to treat the east fairly and help

the show when held in the east, but they want it distinctly understood that when 1914 comes round British Columbia wants the Canadian National Apple Show held in Vancouver. So when the east finally wakes up to the importance of the National Apple Show as an educational and publicity institution they must not expect to retain it longer than they are entitled to it, because they are wasting valuable time now. The apple family will hold high carnival in Vancouver, B. C., in 1914.

Horticultural Conditions in Canada

By PROF. W. L. BLAIR, Macdonald College

IN the past, interest has centred principally around the growing of staple farm crops and animal husbandry. This has been due largely to the fact that these branches of farming supply staple food products, are adaptable to larger areas, and can be pursued with greater assurance of success over a wide range of territory.

Horticultural crops have long been considered as belonging to the non-essential class of food products, but with advancing civilization crops once considered non-essential are transferred to the essential, so in place of horticultural crops being now classed as luxuries, they are considered necessities. The progress of a people may be gauged fairly accurately by their requirements in this respect. The demand for fruits, vegetables and flowers will continue to increase the world over, and the more prosperous the people the greater will be the demand.

Horticulture in Canada is just in its infancy. There has been an awakening interest in all lines of horticulture within the past few years. The possibility of over-production in almost any line of horticulture is no longer a possible obstacle in the way of one desirous of taking up any one of the various branches of this business. In this as in other

lines good products will always find a ready market, and the one who embarks in it with the intention of growing the best will never have any difficulty in disposing of the crops to good advantage.

Apples will always be the principal large fruit crop in Canada, and until harder varieties than we now have are produced, the requirements of the Northwest will have to be supplied from British Columbia, Ontario and Quebec. The Maritime Provinces output will probably always be marketed to best advantage across the Atlantic. While large areas in the provinces mentioned are suitable for the apple, yet some varieties can be developed to a higher state of perfection in some of the provinces than in others. I do not mean to say that certain varieties of good quality, for the variety cannot be grown in all of these sections, but considering their production from the standpoint of perfection in the variety in the matter of quality, certain areas should, owing to their adaptability to certain varieties in this respect, be devoted to their culture.

Without a doubt British Columbia will always grow the finest Spitzenberg of any place in Canada. Ontario cannot be excelled in the development of the Spy. The Spy, as grown in Eastern Ontario,

is superior to the Nova Scotia or British Columbia Spy. The quality of a Quebec Fameuse is without doubt superior to that grown in Western Ontario, British Columbia or Nova Scotia. The McIntosh Red, as grown in Quebec and Eastern Ontario, is superior to the Nova Scotia or British Columbia product of this variety. If fruit-growers of certain sections would co-operate, as they are doing in some parts of the Pacific States, and make a specialty of varieties that grow to greatest perfection, more profit would result to the grower, and the consumer would as well benefit thereby.

Present methods must be improved if we are to give the consumer what he is looking for. There are some good orchardists, but in the majority of cases the orchard receives about half the care it should. The result is that inferior fruit, often poorly packed, is placed on our markets, and the consumer, not being at all satisfied, does not use as much as he otherwise would. This may work all right for the producer in years of scarcity when there are hardly enough apples to go round, but in years of plenty, when there is enough and to spare, the producer of poor fruit suffers, the consumer buying only the best. The best is none too good for the average consumer, and the sooner our fruit-growers wake up to the fact that the consumer knows that good fruit is cheaper than poor fruit the better.

The Niagara district will always supply us with the necessary peaches and grapes. When we think of this small area as compared with the rest of the Dominion, being practically the principal peach-growing part of our country, is it any wonder that land for peach-growing is worth \$1,000 an acre? It seems, too, that even in this section there is an awakening interest in the possibilities of this section in the development of these tender fruits, and in place of the Ontario peach-growers spending time in looking for a foreign market, they find in the West and other parts of Canada an unlimited market. The grower, however, must realize the fact that peaches containing something besides pit and skin are required, and that these must be put up in attractive pack-

ages and placed on the market in an up-to-date way. Facilities for transportation in refrigerator cars are available, and even for short carriage such means for getting the best possible product before the consumer should be made use of.

Plums, pears and cherries can be grown in almost any section where the common varieties of apple thrive. Hardier varieties are being produced and the successful development of this fruit in a limited way will no doubt in the future be pushed into more northern limits than at present. Under extreme temperature conditions that prevail in parts of Quebec our present varieties of these fruits can not be grown profitably to compete with the more favored sections. Transportation facilities are such that the commercial growing of these fruits will be confined to districts where they can be produced most cheaply. However, in a limited way their growth may be made profitable, as is being done in many places in the province of Quebec.

We never see an overproduction of good small fruits. There may be a glut of inferior fruit. The good fruit properly handled will always find a ready market at prices considerably in advance of the usual market price. Without a doubt growers do not spend enough time in the development of a superior product. Their efforts should be more intensive, rather than extensive. It requires much more skill and greater attention to details to develop good than medium quality in these fruits. After an inspection of our small fruit markets there is no one but will say that the bulk of the fruit is decidedly inferior. After seeing the small, poorly developed strawberries and mussy raspberries seen on our markets one wonders that the sale is as great as it is. This inferior fruit very materially lessens the consumption.

First-class vegetable products placed on the market in a first-class way should receive greater attention. These products are, as a usual thing, grown well, but the method of placing upon the market and the treatment they receive in the hands of the average produce merchant, especially in the case of fresh vegetables, should be improved.



WALHACHIN, B. C., MOUNTAIN LAKE WATER SUPPLY

Uniform Score Card for Judging Exhibition Fruit

By J. WM. COCKLE, Kaslo, B.C.

THE three main factors which should be recognized in judging exhibition fruit may be classed as follows: (1) Uniformity in size and shape; (2) uniformity in color; and (3) freedom from blemish. When scored on these points alone, the major portion of the exhibits at any show can be easily divided into two main sections. The main object of the judges should be to place the award so as to debar carelessly handled fruit receiving any award.

We will suppose that a plate of apples is under consideration. Giving as the maximum marks 10 points for each section, we are liable to arrive at something like the following scores:

Exhibit 1.—Uniformity in size and shape, 10 points. Of this plate, four apples are almost perfect, while one is a little smaller, but at the same time taller. The result would be four apples all uniform—8 points. The next point, uniformity in color, will be judged on the same basis. The apples, as they appear on the plate, are all the same color, but on turning them over, stem up, it is found that two of them are not entirely colored over the stem end. The result leaves three apples to be counted as uniform—6 points. We next come to freedom from blemish, and in this section we class everything, whether bruise or bough mark, sting or abrasion of the skin, loss of stem or other damage and the internal condition of the fruit. On looking over the specimens carefully, we find them absolutely perfect. They would then, under this head, receive the full points—viz., 10, making a total of 24 points out of a possible 30.

It takes but a moment for a judge to call out to his clerk the numbers of each section, which can be tallied against the entry number. When added, the results show those having the highest scores. Now supposing there are three plates which show a score of No. 1, 24; No.

2, 26; No. 3, 28. These three plates can then be further scored by the following comparison:—

Size—The size most desirable for a commercial apple, if for dessert purposes, should not greatly exceed a four-tier apple—that is, $2\frac{3}{4}$ in. in diameter. If it measures 3 in, it should not be out-classed as regards size, but anything larger than that should reduce the number of points to which it is entitled. Supposing, in the case of Exhibit No. 1, that the apple, being a dessert apple, is large for its variety and measures $3\frac{1}{4}$ in.: this should reduce the points awarded it by at least 20 per cent., thus giving it a total of 8 points. No. 2, being normal, would receive 10 points; and No. 3, being small, would get 6 points.

Color would then become a factor, and the highest possible uniform color should receive the full marks, and the rest in proportion. No. 1, being a splendidly high-colored apple as regards the general appearance of the plate, although it has fallen down two points in uniformity, should receive the full points of 10 for color, while Nos. 2 and 3 might be much less colored, and receive but a fraction of the number of points—say respectively 4 and 2.

Thus we have the results as follows:

Original score, No. 1....	24	points
Size	8	"
Color	10	"
	—	
	42	"
Original score, No. 2 ...	26	points
Size	10	"
Color	4	"
	—	
	40	"
Original score, No. 3 ...	28	points
Size	6	"
Color	2	"
	—	
	36	"



SOME CHOICE BOXES, VICTORIA, B. C., EXHIBITION, 1910

The factor 10 is the best number to use for plates of fruit containing five specimens, but in the case of plums and crab apples (which are usually exhibited in dozens) the factor of 12 may be more easily applied. With peaches, where six are shown, the factor 12 is again used; with bunches of grapes, where 3 are shown, this factor is also the easiest to use.

In judging all box fruit, the following score card should be used, and every package should be scored:

Pack.—

Height at ends	10 points
Bulge	10 "
Alignment	10 "
Firmness	10 "
Uniformity in size	10 "
Uniformity in color	10 "
Freedom from blemish ..	10 "

This portion of the score should be made of the face of the package exhibited, and a further score may be added as follows:

Uniformity in size 10 points

Uniformity in color 10 "

Freedom from blemish .. 10 "

for all or any portion of the package exhibited.

In judging height at ends, all battens or cleats which may have been placed under the lid should be removed prior to being staged. Where 50 per cent. or more of the end rows of fruit project above the end, and so prevent them being nailed down without bruising, they should not receive any points.

In judging the bulge, the standard should be considered as $\frac{3}{4}$ in. on each side, but no discount should be made from this up to $1\frac{1}{2}$ in., provided the arch of alignment as produced by the apples

is a perfect one—that is, each apple should exactly touch a bent batten representing the lid. In cases where the height at ends is too high for them to receive any points, the extra bulge produced by such height should be allowed for under the limit of bulge; but where this exceeds $1\frac{1}{2}$ in., measured from the top of the wood of the ends, no points should be awarded.

In judging alignment, consideration should be given to the longitudinal and cross alignment as well as to the alignment of the arch of the bulge; this also should stand correction if the lower contents of the box show any irregularity. Firmness should represent not only a solid pack, but also any looseness which may exist between any of the fruit in the top tier or be apparent in the lower tiers when the interior of the box is examined.

After the judging has been completed on this score, and if there is a tie or a very close score between any two or more packages, recourse should be had to scoring the fruit for color and size—or these factors may be included in the primary score of the package.

In judging collections of various kinds of fruit or collections of only one kind, the score card above given should be applied to each package or exhibit, and the total highest score should be allotted the award. It will be noticed that I have omitted one factor which has had considerable usage in the past, and that is a score for quality. If quality is to be scored, it can only be successfully done by reserving the fruit until it reaches a ripe stage. Then, by tasting and cutting, the quality of the fruit can be correctly ascertained. This test being impracticable, it must necessarily be abandoned. In order to have some data on which to base a quality score, we have been compiling quality ratings, supposedly based on what the judges considered the ratio of quality of the various varieties as grown in the districts with which they were acquainted. Such a score card as this might possibly be used as an excuse where all the fruit came from one district, and where the soil and environment were identical. But on the other hand, where you have fruit grown under irri-

gation in a hot, dry district competing with that grown without irrigation, it may naturally be surmised that some varieties will be found which are better adapted to an irrigated environment than to a non-irrigated one, and consequently the varieties of fruit that are grown to the greatest perfection by each separate district will not be the same. Each in its separate class may be perfection and command equally high prices in the market, but by any score card of value for quality some of them will naturally rank higher than others in the estimation of the original designers of the score card, although when such varieties are grown under conditions which are not inimical to their production in the highest stage of perfection, they are naturally inferior to some other variety which thrives under conditions which are adverse to the higher-rated sorts.

I claim, and I think I shall secure the endorsement of a large number of the fruit-growers of the West, that a score for quality based on a preconceived score value can be made the means of giving an award to an inferior exhibit. As an illustration, allow me to suppose a case in point, and in doing this I will draw a comparative score between two exhibits of boxed apples of different varieties competing, as in the case of carlots or other collections, for a sweepstake prize:

Spitzenberg, No. 1; Cox's Orange Pippin, No. 2.

	Points No. 1	Points No. 2
Height at ends	10	10
Bulge	10	10
Alignment	10	10
Firmness	10	10
Uniformity in size	10	10
Uniformity in color ...	9	9
Freedom from blemish.	8	9
Color	10	10
Size	10	10
Quality as based on a score card value....	10	8
	97	96

The winner scores 97 out of a possible 100 points, but has been discounted one-fifth for blemish in the fruit, while No. 2, which has the advantage on this point,



AT VICTORIA, B. C., EXHIBITION, 1910

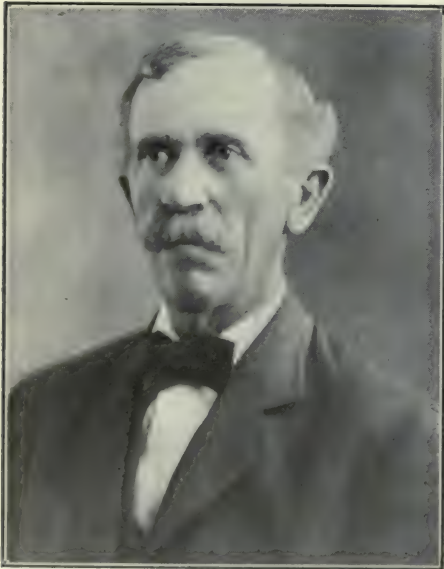
being awarded 9 out of a possible 10 for freedom from blemish, and secured an equal number of points for everything except quality, and further, awarded one point over its competitor on the most essential point in the whole score, is in second place because the American Pomological Society and others have published a score card giving the Spitzenberg a score value of 10, while the Cox's Orange Pippin is only credited with a score of 8.

This example shows most decidedly that any fixed score value card may be the means of debarring the best exhibit of fruit receiving the first award. This not only applies to the case of the two apples mentioned, but in other cases the disparity is more pronounced, and would allow of a loss of nearly 50 per cent. of any of the factors of 10 before it was displaced from the top of the score.

Such a condition as this should not exist. Every variety should stand on a parity, and should at any exhibition receive a score for every quality it has in common with any other exhibit against which it enters into competition. I anticipate the question which will, I know, rise to the mind of those who have so far read this article. How are we to eliminate the exhibition of inferior grades of apples against those of recognized high commercial value? This point is one that will well form the basis of an open discussion, and I trust the Editor will open his pages for the fullest discussion from all sources, and that the conclusions of the fruit-growers of the West will result in the establishment of a universal set of rules for the use of the judges at all fruit exhibitions, based on the score card I have suggested.

The Fruit-Grower's Life

THE fruit-grower's life is one of the most attractive in the world, combining as it does an



H. M. LIGHTY, OF TREE PEDIGREE FARM,
SUNNYSIDE, WASH.

agreeable outdoor existence with full scope for the exercise of mental powers. From the opening of spring to late autumn his days are fully occupied, first with cultivation, pruning, spraying, getting in stock of baskets and other preparatory operations, and then with picking and marketing his crops, which will commonly include cherries, strawberries, currants and raspberries, pears, plums, peaches, grapes, and apples, filling a long season from May to November. It is in winter evenings that the fruit-grower attends meetings of his horticultural society or of farmers' institutes; and the fruit shows and annual meetings of Provincial Fruit-growers' Associations are, of course, always held in winter. The fruit-grower has thus an ideal mixture of concentrated effort and comparative leisure. His surroundings are of the most attractive, and science has been brought to the aid of nature with a view to increasing his comfort or facilitating his business.

ANOTHER WARNING.

AT the Victoria, B. C., police court on February 4, before Magistrate Jay, George Hicks, fruit-grower, Swan Lake, Maywood, B. C., pleaded guilty to having violated three separate sections of the Inspection and Sale Act. Firstly, by facing his boxes of apples, thereby giving a false representation of the contents of the boxes; secondly, by not having his boxes marked in a plain and indelible manner, in letters not less than one-half inch in length, with his full name and address, the variety and the grade; and thirdly, by overgrading his fruit. On the first count defendant was fined ten dollars and costs, and was let off on suspended sentence on the other two charges.

Copies of the Inspection and Sale Act, explaining how the boxes of fruit must be marked, and defining the different grades, may be had free on application to any Dominion Fruit Inspector or the Fruit Division, Department of Agriculture, Ottawa, Ontario.



A WELL-LOADED TREE IN MR. BURGESS' GARDEN, SOUTH VANCOUVER

Scientific Progress in Lifting Water

IN an article on "The Fruit Industry of British Columbia," which appeared in *The Fruit Magazine* for October, 1909, we endeavored to give a fair and impartial view of the possibilities along horticultural lines in the western Province of the Dominion, with judicious warnings as to difficulties to be met and overcome by the prospective settler. In the course of this article we said:

"There are many of the so-called dry districts where the soil moisture, with proper cultivation, is quite sufficient to produce a full crop in an ordinary year, but there comes periodically the extraordinary year when, without an artificial supply of water at the critical time, the whole crop may be lost. In the arid districts it should be seen to that the right to a sufficient supply of irrigation water is obtained, whether it is needed every year or not.

"There are immense fertile tablelands

along the Thompson, Columbia, Kootenay and Similkameen Rivers and the Kamloops, Okanagan, Upper and Lower Arrow and Kootenay Lakes, which cannot be irrigated from the available mountain streams, but it may safely be predicted that some day in the not distant future a genius will arise who will invent a comparatively cheap method of pumping the water from these large reservoirs up to the higher levels, and who then will venture to estimate the quantity of rare and luscious fruit which this province may be capable of producing, or the gratitude that future generations will lavish on the memory of the man who shall make the cultivation of these beautiful plateaux possible?"

This prophecy now seems to be approaching fulfilment at an earlier date than we had anticipated.

On the banks of a stream in the State of Wyoming stands the

little town of Thermopolis. It is a semi-arid district, and many of the farmers by pumping systems were putting water on their soil and the production was heavy. On adjoining farms on the banks of this stream lived two men, named Gaynor and Robinson. They knew the great value of the water that constantly flowed by their borders, but they lacked the means of getting it from the river to their lands. The necessity of water became a nightmare with them, and out of that was the birth of the Water Lift. In the winter of 1906 they constructed two large floats of drift-logs and lumber, and installed them on a barrel-shaped structure, about three feet in diameter and eight feet long. On this drum were six paddles, on the plan of the ordinary undershot wheel. Wound spirally around the drum was a single water passage with one end so arranged that it dipped into the water as the drum rotated. At the other end of this water passage, or conduit, was a delivery pipe, with the end overlooking the land to be irrigated. Their theory was that each dipper full of water would remain in the lower part of the pipe, and the rotation of the machine would screw it along to the discharge pipe, and then up and out on to the ground. When the day of starting it in operation arrived the shore of the little river was dotted with "doubting Thomases." It was the entire population of the hamlet of Thermopolis. They felt a generous admiration for the courage of Gaynor and Robinson, but they pitied their judgment. "How a pipe just wound around a barrel, with no valves or anything in it, could push water up was excusable as a dream, but ridiculous as a working reality." "It could be screwed along to the discharge pipe, but it wouldn't go up." Perhaps the inventors builded better than they knew, for they had harnessed and transposed two of Nature's greatest forces. They cast off the fastenings, the current started the rotation of their rude contrivance, and in a few turns a six-inch stream of several hundred gallons per minute was going out of the top of the pipe and into their soil. They had succeeded in placing alternate cushions of

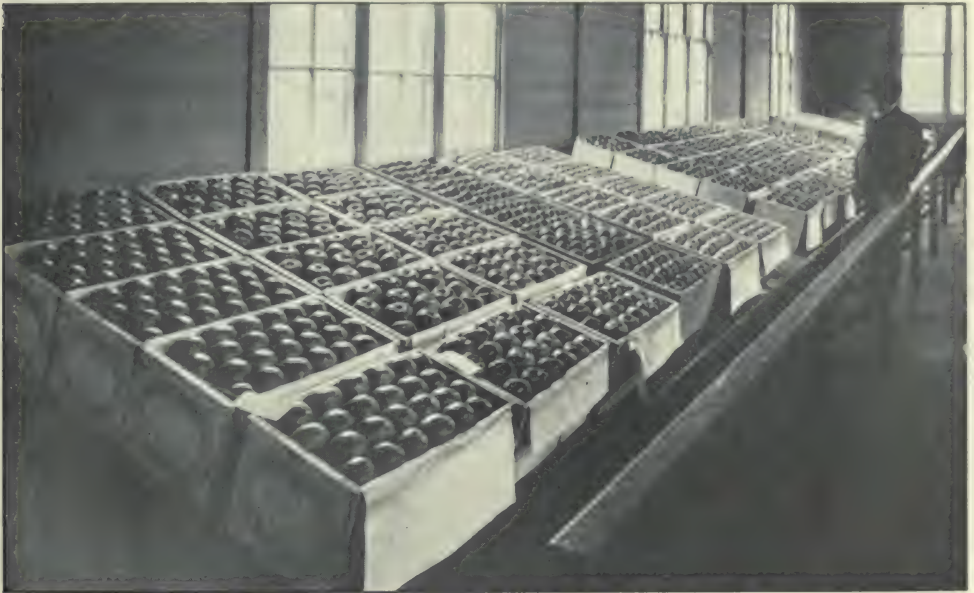
air under alternate cushions of water, and when confined in a pipe with succeeding loads behind them, they must go upward and out. It was a simple and unique application of a very old principle of pneumatics. It was the acme of that principle from an industrial standpoint, in that it compelled Nature to employ her own forces to produce the air compression.

When Brother Jasper, the negro preacher of Virginia, held his celebrated debate on the question of "Whether the earth goes around the sun, or the sun goes around the earth," his impassioned and pious peroration was: "I don't know nuffin 'bout science, but I do know de Lawd say de sun do move."

Gaynor and Robinson would hardly take rank as scientists, but their machine lifted water. The sceptics on the banks saw it and departed believing. The news spread, and among those to hear it was the president of a wholesale grocery house in Denver, Colorado, Mr. E. U. Combs. Happening in the vicinity of Thermopolis, he went there and saw the machine in operation, and grasped at once its wonderful efficiency and the wide field of its possibilities. He learned also that the application for patents covering the principles and construction were undergoing the proverbial hibernation in the patent office in Washington. Its usefulness so absorbed him and he thought of it so constantly that by the time he returned home he had conceived the idea of a double spiral arranged concentrically around the drum, with two dippers on the one end, and constructed to empty the air and water into one discharge head at the other end. Constructing a model and demonstrating his theory, he then entered into negotiations with Gaynor and Robinson whereby he was to finance the matter and undertake to expedite their principle and his improvement to patent. He proceeded to Washington, and with the aid of senators and members of congress from his locality he succeeded in bringing it to the notice of President Roosevelt, with the result that it was passed to patent within a very short time on the strength of its value to the reclamation service. Subse-

quently these franchises came into the possession of the Pneumatic Water Lift and Land Company, of The Dalles, Oregon. Their purpose with it primarily was the development of the arid and semi-arid lands of the Pacific Northwest. In the wonderment over the certainty, the simplicity and the efficiency of its operation* they entirely overlooked the essential fact that physical conditions imposed limitations on its range of service. The machine, as then constructed, was practical for a lift of fifteen or twenty feet, and twenty-five feet was about the maximum. In the Northwest the rise

pressed Mr. Kirk immediately, and before any machines had been constructed along the specifications then existing, he invented an entirely new, useful and highly efficient improvement. It consists in carrying several spiral passages or conduits around the drum, concentrically back and forth, from one end to the other, the object being to increase the length of the passage and thus obtain a greater lift and at the same time not increase the length of the drum. This arrangement may be varied so as to obtain a triple or multiplex set of spirals. The machine is built throughout of sheet steel



VANCOUVER ISLAND APPLES AT THE NEW WESTMINSTER EXHIBITION, 1910

and fall of the streams are considerable, and the lifts are generally high. Among the stockholders of this company was Mr. J. B. Kirk, proprietor of The Dalles Iron Works. Mr. Kirk, who is a man of more than ordinary genius, in earlier life had long filled a position of trust and responsibility with the Willamette Iron Works, of Portland. Subsequently he entered the service of the government as chief machinist of the fleet under Admiral Dewey, and was on duty when the battle of Manila was fought, and while the fleet was stationed in the Philippines. The limitations of the Water Lift im-

without a valve, bolt, screw or working part in its entire construction—save, of course, the bearings, which are case-hardened steel rollers, and owing to slow speed will last indefinitely. Treating with hot asphalt paint once a year will preserve it effectually. Installed in currents it pumps without any cost but a few gallons of oil for the bearings. In lakes, the Engineer's report shows that it will do as much work as the most highly perfected pumping systems now in use, and with only 36 per cent. of the power. The machine in actual operation will lift just one foot perpendicular for every four

feet of the spiral conduits on the drum, the principle being that for every dipperful of water taken in a sufficient quantity of air is also received to lift the water by the natural law governing the action of air when confined in any pipe or vessel.

The new type of machine, which has been brought to a state of complete proficiency and perfection, now raises volumes of water ranging from 2,000 to 3,000 gallons a minute to heights ranging from 25 to 75 feet, according to the requirements and size of each water lift. For example, one of these new models, which is now in operation at Blailock, Oregon, has a capacity of 3,000 gallons a minute raised to a height of 65 feet.

The maximum lift of this machine is about 95 feet. Machines can be built that will lift to a greater height, but they are not recommended because of their great size. Where greater heights are to be reached, the stepping or battery system should be adopted, when a succession of machines of moderate size will lift water to an indefinite height.

We are much impressed with the possibilities of this new system of pumping water for irrigation purposes, particularly where a moderate lift only is necessary, and consider it well worth investigation by those interested in the development of

fruit and other lands where the necessary irrigation water is not available from mountain streams.

We are indebted to Messrs. W. F. Gitchell and Lewis Livingstone, of 334 Hastings Street, Vancouver, for the privilege of examining a working model of the machine in actual operation, and who doubtless will be glad to answer enquiries for further information on the subject.



THE LATEST IMPROVED METHOD OF LIFTING WATER FOR IRRIGATION PURPOSES

Professional Agriculture

By W. T. TREGILLUS, Calgary, Alta.

IT has often occurred to me that if those engaged in agriculture—whether tilling the soil, raising cattle, or any other of its many branches—only realized the nobleness, healthfulness, grandeur, and the thoroughly uplifting influence it has on them, and understood its absolute importance, we should find fewer farmers dissatisfied with their vocation and more of the young folk would remain on the farm.

Can we find a reason why agriculture—the all-important industry of the uni-

verse—does not occupy the foremost position in our minds?

In the early centuries the land was owned by the favored few. These men had no love for the soil and took little or no interest in it; the care of the land was left to their serfs, and these vassals were the stock from which agriculturists descended. As time went on these serfs, who were regarded as belonging to, and part of, the soil, became tenants, and it is practically only since the discovery of the American continent that land could



B. C. HORTICULTURAL ESTATES IRRIGATION DITCH, WALHACHIN, B. C.

be owned, in any general sense, by the actual tillers of the soil, and the farmers have been able to throw off the servile attitude to which they had been obliged, by the lords and owners of the soil, to submit. Even today in the older and civilized countries the tenants are in a state of servile compliance which is a disgrace to the twentieth century. Be these—or any other—the reasons, the fact remains that the farmer has not lived up to his opportunities, nor has he impressed the importance of his calling on others. Why has not the farmer pushed his calling to the front? Every other occupation has been extolled and forcibly displayed before the public by its followers, yet no other vocation has as many claims for pre-eminence as agriculture.

Agriculture is rated far below its real importance by everybody, and, to his shame be it said, by the farmer most of all. If the farmer does not think enough of the business in which he is engaged to push it right to the front as the chief industry of the country, in fact, the one on which every other depends, no one else is going to do it for him.

R. W. Emerson says: "The first farmer was the first man, and all historic ability rests on possession and use of land"—showing that the calling of agriculture is time-honored, as well as being the most natural and healthful life we can live, the only one in which we may breathe the air of freedom and enjoy health, space and sunshine. In what other path of life may we regulate to such an extent our own hours of labor, and walk abroad among our fellowmen with a feeling of such absolute equality?

Those engaged in tilling the soil are not subject to the temptation to rob and ruin their fellows, as in so many other lines of gainful endeavor, for in agriculture integrity and absolute honesty must be observed. "Whatsoever a man soweth that shall he also reap," while true of all men eventually, is strikingly so of the husbandman at all times. When he ceases from the strict work of the agriculturist and becomes a tradesman, then he may be tempted to trickery, but as long as his dealings are with the soil he finds the behests and encouragements of Nature are all and only on the side of that which is recognized as the most

worthy in man—the side of truth, righteousness and rectitude.

There is no other calling which is so conducive to thorough-going manliness as that of farming, nor in which he may so nearly attain his full stature. The characteristics which are found in heroes are found also in the farmer—power, or capacity to do things; courage, or the quality to face or overcome obstacles that lie in the way; and faith, that quality that makes us believe that our work will make for us something that is worth working for. Nobody expects the farmer to cringe or curry favor; he is never tempted to hide his opinions in the hope of dealing more successfully with his fellow-men, nor is he afraid that if outspoken he will curtail his prospects of prosperity. He may be orthodox or heterodox as to religion, have any shade of politics, may teach any sane conviction at which he has arrived, and neither Nature on the one hand, nor the market to which he sells on the other, will be affected by any of these things. Nature asks only that a man be intelligent and industrious, and the market asks only that his offerings be of real value.

In almost every other avocation man is handicapped in the exercise of his most profound convictions. In great corporations presidents and vice-presidents are frequently under the restraint of influential stockholders, and have to shape their policies to please the heads of their departments. In political life it is even worse—high officers, premiers of provinces, mayors of big cities have often to be deaf to the reasonable complaints of a long-suffering public, stifle their personal convictions, and be blind to the misconduct of other officials, who are supposed to be subject to, but who are, in fact, independent of, the chief executive. Who shall say to the farmer, "Sow this field with wheat, barley or oats," when, in his judgment, another crop should be sown or it should lie fallow? Who can dictate to the farmer in any particular? He knows that he is not expected to maintain any view or confess any creed that is not in accord with his deepest convictions, nor to yield to the opinions, prejudices or jealousies

of any man or set of men, save only as his conscience may lead him. In what other walk of life has the individual, to the same extent, the right and power to regulate his own life, think his own thoughts, express his own convictions, carry out his own theories and strive, without let or hindrance, to the attainment of his own ideas in so far as this may be done without trespassing on the rights of others?

Agriculture is the only calling in which success is anything like a certainty, notwithstanding the fact that the present methods of production and distribution outside the farm leave much to be desired, also that almost unthinkable sums of wealth which the farmer annually creates are also annually appropriated by a few powerful corporations.

The percentage of failures in the pursuits of traffic, trade and professions of all kinds, as given by reliable statisticians in old and settled countries, is so high that one hesitates to quote them, and but for the fact that for every man who fails another immediately takes his place, thus clearing away the wreckage, the accumulation would be fearful to contemplate.

If a dozen men set up in any business in a community which can only support three, it is certain that nine of the twelve will fail, and after a fierce struggle it will be a case of the survival of the fittest. If you double or treble the number of farmers in any community you will not doom any one of them to failure, or affect to any extent the profits which any one of them may reap as the reward of his toil.

At the present time the consumers are treading so closely on the heels of the producers that if the entire body—and it is a vast array—of business and professional men, who in their present pursuits barely maintain an existence, should move to the soil tomorrow, it would not reduce the profits of those already engaged in agriculture, but would be a great blessing and a benefit to all. A competent business man, or an up-to-date, wide-awake professional, may, from no fault of his own, be starved out of a locality; but who has ever heard of an

intelligent, energetic, careful farmer failing to make a comfortable living and providing an independent income—although possibly but a modest one—before being prevented by old age or decrepitude from following his labors?

Every day the importance of the farm and the farmer, as the foundation of our national prosperity, is being more equally recognized, and in no line of endeavor, especially in this country, is there a brighter future than in farming. The intelligent, industrious landowner who reads, knows his opportunities and honestly takes advantage of them, has a business that is the peer of any the great cities can offer. The man who gathers the fruits from the soil, dealing at first hand with Nature, is the only independent one. The honors of Creation are all in the earth, the air and the sunshine.

If we want to realize the importance of agriculture, let us briefly consider that aspect of it. Mother Earth is the great

storehouse of all things. She has enclosed within her crested walls the raw material for everything within the imagination of the human mind. The vegetable kingdom contains the instruments that gather the elements from the storehouse which makes all animal existence possible; and the farmer, by tilling the soil, uses these instruments for bringing into being that which is necessary to maintain animal life.

The manufacturer, although important, simply alters things—transforms them from the raw material that finds its origin in the soil into required articles for the food and use of man; the transportation company, also important, employing large armies of men and a large amount of capital, simply changes the places of things raised from the earth; the commercial man but changes the ownership of things. The farmer alone, of all the occupations known to man, adds to the common wealth. He is a man among



BIG APPLES FROM GRAND FORKS, B. C., FIRST CANADIAN NATIONAL APPLE SHOW

men, with a business so complex and many sided that he touches civilization at more points than does the man who is a unit in a large city.

The world gets its best from the farm. When it wants good things to eat it sends to the farmer, and is never disappointed in getting what it wants. If it wants the choicest fruits, to the farm it must send, and if it is not plentiful in the East, there is the West to draw from. The farm also grows the finest timber, and our mines never fail to produce.

When the world feels the need of men to do great things, it looks also in the same direction, and from the farm a steady stream of men goes to answer the call. We find them in the offices, in the factories and in the stores of the great cities; they are doing much of the world's work today, and they will always be doing it, and it is to the farmland of this great country of ours that the world is sending her thousands who are seeking homes and prosperity.

The world gets its best from the farms. Let us be thankful there are yet plenty of the best left, and the farmer who throws the environment of the farm around his children provides them with the good to develop their minds, and makes them men and women possessing the greatest gifts of mankind—manly, strong characters and noble ideas.

Now let us consider the possibilities of agriculture. We are at the beginning of an era in which experiment, foresight, skill, invention and learning will transmute as never before the labor bestowed upon the land into wealth, health, length of days and happiness, equal in progress and development to any that has hitherto been accomplished in other lines of industry.

Agriculture will, for progress, take her stand side by side with any or every occupation, notwithstanding that in the past intelligence and mental learning have not been considered necessary. Muscle was considered the all-important feature; but the farmer of today believes in the four "M's"—mind, money, machinery and muscle, but as little of the last as possible.

Those on the farm are realizing that

the highest education and the best mental equipment are none too good for the tillers of the soil, and that the brightest and brainiest of our citizens can find full scope for their ability and ample remuneration in return for the labor expended. It is becoming generally known that agriculture offers immense fields for investigation and development by strictly scientific methods. Successful men with large business experience—merchants and well-to-do professional men—are taking it up as a feature of their summer life, or are exchanging the city life for the life on the farm, finding in serious contact with the soil a worthy exercise of their highest faculties, and reaping from their labor a delightful experience of things actually accomplished—realizing in the words of Thomas Carlyle: "The land is the mother of us all, nourishes, shelters, gladdens, lovingly enriches us all—in many ways from our awakening to our last sleep on her blessed mother-bosom, does she, as with blessed mother arms, enfold us all."

Those now engaged in agriculture are demanding schools, colleges and courses of practical instruction for themselves and their sons which will fit them to make of the farm a plant for the scientific and skilful production of all that it will yield. The soil is being searched for its mysteries, just as are the sea and stars, and is being made to yield its secrets. Lands hitherto considered worthless are now, by the aid of irrigation, brought to the highest state of production. Roads bad and at times impassable are now, by the magic of mind and muscle, transformed into highways of pleasure and profit.

The loss in the production of fruit and grains from frost is being overcome by the production of new varieties of plants which live under conditions which were fatal to the original plants. Noxious weeds are being transformed into valuable foods for man and beast, and what has been attained is simply a foretaste of what will be accomplished. We have the seedless apple, the pitless plum, the white blackberry and the blue rose. "The wizards of agriculture" are only showing the way to an era of development which

will be as wonderful as it will be profitable.

The pests of plants and diseases of animals, which cause so much anxiety, are being brought under control and cure; information with regard to probable weather is being obtained for our conveniences and profit; if what has been promised by the American weather bureau is accomplished 95 per cent. of the future scientific forecasts of the weather will be absolutely correct, and will be given at least three months, and possibly for a year in advance. This will give the great advantage of knowing whether a season will be late or early, wet or dry, hot or cold. Starch can be increased in potatoes or corn; gluten can be increased in wheat; if the eggs from our poultry are smaller than we like, the size can be increased; if there is not enough nitrogen in the soil we can sow it broadcast with bacteria at a trifling cost, and these microscopic organisms will extract it from the air and feed it to our plants. If for the ordinary crops there is too much alkali in the soil, seeds and plants can be obtained which will thrive even there and return a profitable crop. Drainage is being appreciated, irrigation applied, scientific culture being developed to defy drought; and so, all in all, the uncertainties of the agriculturist are becoming fewer than those in any other avocation, and agriculture may, in this great country, be entered upon with less capital than any other business which will produce equal returns, and can be made a greater success by those who are determined to make it so. But of course it depends entirely upon the individual. The incompetent, the shiftless and the indolent will always fail; those who have a distaste for the farm, who would tire of the solitude and see no beauty in Nature, and have no interest in the growth of things, in the marvellous development of seeds and the process of seasons—to such the farm would be wearisome and unendurable, and they must seek a livelihood in the cities and busy towns.

Every section of this great Dominion offers its own particular inducements to those who follow agriculture, but none are more attractive than the Western

provinces. The recital of some of the not uncommon successes one hears in the Western country—although told in perfect truth and soberness—seem romantic to those who live in the older countries where possibilities are most restricted.

If those who live in the congested farming districts and overcrowded cities of the older countries could but understand that we have only about one per cent. of our fertile soil under cultivation, we should have such a rapid settlement as no country has ever experienced.

The citizens of this great new country want to realize the absolute necessity of a prosperous agriculture to the existence of a prosperous nation, and want to impress this fact indelibly upon those with whom they entrust the government of their affairs. History has many examples of the decay of nations due to the neglect of agriculture. The land that was once flowing with milk and honey is now a barren waste; the great Roman Empire, with all its power and civilization, passed into oblivion when it forgot that agriculture was its foundation and main-spring. When but four bushels of grain was all that could be gathered at harvest time from one bushel sown at spring time, her doom was sealed. Such examples should be kept in mind notwithstanding our present prosperity. Those who give thought to questions which make for lasting prosperity recognize with regret that we are much too prodigal with our natural resources.

We are reaping unthinkable sums of money from the farms of this country, and notwithstanding the exploitation of trusts and combines, the excessive tariffs, market and transportation difficulties, we are rapidly making for a condition unsurpassed by any other class of citizenship.

The social life of the farm is more attractive than ever before, and the improved educational facilities, the labor-saving appliances, the rural delivery of mails, the increased railway accommodation, improved roads and country telephone lines, are daily adding to the attractive features of farm life.

A Little Common-sense

PROF. W. T. CLARKE, of the University of California, makes the following interesting observations in a communication to the "Fruit-grower":

In conversation with certain growers of trees, in many letters, and as current items in the daily papers, we frequently run across assertions in the matter of horticultural practice that on the face seem absurd to the experienced handler of trees, and yet which receive a certain amount of credence. It is hardly to be wondered at that much that is absurd and altogether unreliable should receive this credence, for much is today being done in horticultural work that is sufficiently marvellous, and which is yet well founded and correct from every point of view.

During the years past in horticultural work wonderful developments have come about, and were we to consider these developments we might well be struck with astonishment. The peach of today is infinitely superior to its progenitor of we know not how long ago. Can we recognize in the wonderful apples of today the miserable little progenitor of this wonderful fruit? It seems hardly possible that the change that has actually come about could occur; and yet it has, so, as we have said, we can scarcely wonder when the horticultural long bow is drawn that many believers are found. There are a few of these picturesque tales that we would like to speak of now.

In the general press we have noted the assertion that the walnut could be successfully grafted upon the oak! We have, indeed, met with individuals who have gravely asserted that they have seen trees thus grown, entirely successful, and that were producing good crops.

The writer when in conversation recently with an owner of very considerable properties in the Sierra foothills, was asked the question whether scrub oaks, growing on this property, could not be used as stock for a large walnut grove. This owner was more than half convinced

that the scheme was feasible, for he had read of its possibility in the paper. We will say, in reference to this horticultural fallacy, that we have made it a point to run down reported successful work of this sort, and in every case so investigated we have found that the report was either entirely without foundation, even as an attempt, or else that the experiment had been made and no results obtained save the death of the walnut scion. It almost seems as though someone with a well-developed hope and boundless optimism had started the story of the possible success of this practice, and had in time come to believe, from frequent repetition of the yarn, that it was true. So far as actually successfully doing this thing is concerned, we have yet to see it, an impossibility, accomplished. As a matter of practice, so far as the evidence goes, it is impossible to successfully grow the walnut upon the oak.

It seems almost superfluous to point out the sure failures of this action from the point of view of botanical affinities. It is a well-recognized fact in horticultural procedure that for successful results in budding or grafting, there must be a rather close relationship between the scion and the stock. To illustrate, we know well that the apricot, plum, peach and similar fruits are closely related, and when these close relatives are worked together the results are eminently successful. Now were we to attempt to work these fruits upon the apple, pear or quince, we would be entirely unsuccessful, and this fact is so well known and generally recognized by the average grower of trees as to need no elucidation. It is as manifest an absurdity to attempt the growth of walnuts upon oaks as it would be to attempt to grow peaches on apple stock. So much for one of our present-day horticultural fallacies.

Occasionally we see a rose bush on which many varieties of roses are grown. Indeed, curio rose bushes and climbers that have had budded on them fifteen, or

twenty, or even more kinds, are by no means uncommon. They are interesting as illustrative of the possibility of grafting or budding where the relationship between the stock and scion is close. We must not believe, however, that because we can do this rose to rose, we can also succeed in grafting roses on willows. We have seen it gravely asserted in the press that this combination is possible. Not alone was this paper-assertion, for a little later this writer was confronted with the claim of an individual that not only was it possible to graft the rose on the willow, but the person making the assertion declared he had actually seen it done. This was something of a stagerer until further questioning developed the fact that he did not care to state definitely where the particular tree was growing. Another horticultural fallacy, then, we may consider the growing of roses on willows.

One more example of this sort of thing is to be found in the constantly recurring assertion that prunes and plums can be successfully worked on the olive. To the experienced tree-grower this sounds like trifling with the truth. Yet the novice may be led to believe it to his own financial loss. This fallacy was once presented to this writer with such circumstantiality of detail that it all seemed very convincing. The asserter went so far as to tell the writer just where the orchard was where it had been done. Here, the writer was told, could be seen silver prunes growing on olive roots. The story certainly sounded good, impossible though it was. A few days later the writer went on a pilgrimage to the indicated locality, and it was found that an unprofitable olive grove had been growing there, and also that the owner had decided to substitute silver prunes for the olives. So far the story held together, but from this point on things were different from the report. No grafting had been done. The olive trees had been pulled out and plum trees on plum roots planted in the place of the olives. So another horticultural fallacy had to go and join its fellows.

We might multiply these illustrations almost indefinitely, but consider that enough has been said to illustrate our

idea. We must in our horticultural work constantly bear in mind the fact that nature demands a certain rather close relationship between stock and scion, and if we attempt to run counter to this rule, our failure can be surely predicted. Do not let the horticultural fallacy claim you as one of its victims.

The writer believes that the orchardist, or the man who intends to become one, should familiarize himself with the conditions under which others in the same business have attained to their success, or that have led to failure with others. Knowing the conditions that have conduced to either success or failure, the planter can make the successful practice his own, or can avoid the stumbling points that have brought about the fall of the other fellow, and, in some measure at least, insure his own success. There is no use for us to go through, in our own experience, the whole detail of the evolution of the horticultural experience. We should be more than willing to commence our structure on the foundation, good and solid as it is, laid by the horticulturists of the past. To do this we must study, so far as may be, the work of these others, and when we have studied this work we should apply the principles brought out to our own work.

A recent publication from the Michigan Experiment Station, Bulletin No. 262, entitled "Suggestions on Planting Orchards" is decidedly worthy of the study of intending planters. The writer feels inclined to quote rather freely from this bulletin as it emphasizes certain facts we have had occasion to dwell upon, renewed emphasis on which seems desirable at this time when much planting of trees will be done.

Under the head of "Site and Soil for an Orchard" the writer of the bulletin has this to say in part:

"The success and profitableness of an orchard depend so largely upon the site and soil that it behooves the prospective fruit-grower to give to these features careful consideration. before he ventures into the business.

"The site for an orchard should not be low or level, but should be more or less rolling, and have an elevation somewhat

higher than is common to the vicinity or section. Such a site supplies good air drainage. Cold air is heavier than warm air, and always sinks to lower levels, hence low grounds are more subject to frosts and severe winter freezing. . .

"Even on higher lands pockets must be avoided, because cold air settles in them and cannot get out. It is not necessary that a site be extremely hilly, or that the orchard be located upon high hill tops. In many cases it would be better to avoid hill tops on account of their exposure to winds and their tendency to severe soil-washing. Abrupt hill sides should also be avoided because of the difficulties encountered in spraying, tillage and harvesting.

"The different fruits require different types of soil, but all do their best on a strong, deep, well-drained soil. Trees cannot thrive upon soils that are depleted, shallow, or poor in texture, where an impervious hardpan is near the surface, or where they have 'wet feet.' Examples of failures due to these conditions are not uncommon. Stunted trees or blank spaces in the low spots of an orchard usually indicate poor soil, drainage or poor air drainage, or both. . . .

"The soil that is shallow or devoid of plant food cannot be expected to produce an orchard and keep it in vigorous health and productivity. While plant food can be added to the soil, it is a factor which the orchardist must not overlook or underestimate, because it is just as necessary that an orchard produce a good strong growth in the first few years of its existence as after it comes into bearing."

These items, in the matter of the choice of site, are of vital importance, and if we fail to take them into consideration in our work we can almost surely predict failure.

"The preparation of soil previous to the planting of an orchard will depend entirely upon its nature, its texture and its condition of fertility. It is generally agreed that a field should be brought into the best possible state of cultivation before it is planted to fruit trees. If young trees are planted in a soil that is not in a condition to induce a strong,

vigorous, healthy growth throughout the first few years of their lives, the orchard will never be as healthy, productive, or bring as good returns as it would have done if the trees had been given a good start, and the lack of clean and thorough cultivation previous to planting the trees makes it much more difficult and expensive after the trees are planted. Not only should the preparation of soil be clean and thorough, but it should be deep. The soil should be loosened up as deeply as possible with the plow. On some soils it is highly desirable to use the sub-soil plow, running it to a depth of from 16 to 20 inches. Soils which are naturally loose and subject to leaching would be possible exceptions and should be treated in a way to avoid leaching."

The matter of deep preparation of the soil thoroughly accords with what we have had to say in these columns on the same subject.

The matter of inducing a strong and vigorous growth on the part of the young tree is also of great importance. It is true that if the young animal is stunted in its youth through starvation or by any other means it never fully makes up for the loss. This fact has been well established. It is a principle of nutrition that applies with equal force to the trees. By all means we must see to it that our trees have every chance for a vigorous and successful growth in their youth, and then as they grow older and begin to produce we can expect good returns for the fair start we have given them.

As to the time for planting, the writer of the bulletin has to say:

"The advisability of fall or spring planting depends upon several conditions. Fall planting has the advantage over spring planting in that the trees become firmly established in the soil before winter sets in, and are able to start growth in the spring before the ground can be marked and put into condition for planting. This is important, because the trees get a good growth in the early part of the season, before the summer drouths occur. On the other hand, there is more or less danger from winter injury during a severe winter, or from the drying out of the trees if it is long and dry. . . .

"The convenience of the season will determine, in a majority of cases, whether or not the planting shall be done in the fall or spring. Very often the rush of spring work induces the grower to hurry his planting, or to do it carelessly, and as a result a poor stand is secured, with crooked rows. Others have large crops to harvest in the fall, and would find it more convenient to do the planting in the spring. If there is any doubt as to the best time to plant, let it be done in the spring."

Generally speaking, this accords well with successful practice, though we would prefer to make emphasis on the idea of early spring planting or even mid-winter as the best for our conditions when handling deciduous trees.

"It is by all means advisable to secure first-class trees. Such trees should be medium in size for their age, free from injurious insects and diseases, should have a healthy root system, with enough good-sized roots to hold the tree firmly in the soil and a good lot of fine roots. Not all varieties have straight trunks, and this should be taken into consideration. Large-sized trees should not be considered first class, and should be avoided, as often much of their root system is removed in digging, and they adapt themselves to new conditions with greater difficulty. The extra expense necessary to buy first-class stock will be many times repaid before the trees have outlived their usefulness.

"It is usually preferable to secure trees from a nearby reliable nurseryman. His soil and climatic conditions are more apt to be like those of the field in which the trees are to be set. The trees are thus saved the unnecessary effort of adapting themselves to new and radically different conditions. However, the importance of this point is doubtless overestimated, as many distant nurserymen may have practically identical soils and climates. Other advantages of patronizing nearby nurserymen are the saving of expense in shipping and avoiding the danger of injury in transit. Then, too, the purchaser can visit the nursery and select his trees and be more certain to secure what he desires. There is doubtless considerable

advantage to the orchardist in furnishing the nurseryman with scions or buds secured from trees of known productiveness, hardiness and health.

"As soon as the trees are received from the nursery they should be carefully heeled-in in the ground, as near the field intended for the orchard as possible, and preferably at the north side of a building or wood lot, especially in the spring, in order to protect them from the sun, keep them cool and retard their development. The trench should be dug sufficiently deep to receive all the roots. The trees should be carefully laid in, with their tops to the south, then fine, moist soil should be put between the roots, so that no air spaces are left."

We have devoted considerable study and time and space to the matter of bud or scion selection, and are fully convinced that through this means we can expect the greatest advance in the producing value of our orchard trees. The value of this item, the matter of "pedigreed trees" is now engaging the attention of our best horticulturists and should be noted by every intending tree planter. Probably no single item of practice is of more importance in improving the condition and yield of our trees than this, and yet it is only of late years that the importance is being recognized.

Much care should be exercised in planting the trees, and again what the bulletin under discussion has to say on this subject is well worth while. We quote again as follows:

"The ground should be smooth and in good tilth. Plowing along the line of tree rows may lessen the hand labor somewhat, and afford opportunity for surface drainage, but the holes must be dug by hand. The harder the ground, the wider and deeper the holes should be. In all cases they should be wide and deep enough to receive all the roots of the tree without it being necessary to crowd or twist them. If the bottom is hard, it should be picked until it is mellow, or some loose surface soil should be thrown in. Never throw coarse manure or sods into the bottom of the hole, hoping to furnish humus and fertility to the tree. While they are decomposing they absorb

moisture and cause heating, which is sure to injure the roots of the trees.

"When the young tree is dug in the nursery, a portion of the root system is removed, some roots are broken and the ends of others are ragged and torn. These broken roots and ragged ends should be cut off smoothly so that the cut surface will lie upon the bottom of the hole. Then, if there is an abundance of fine roots, especially under the crown, they should be thinned out. If the trees are heeled-in in the fall, this root pruning may be done then, and by spring the cut surfaces will have calloused over, though usually the roots are pruned just before planting.

"If a stake has been placed to indicate the proper location of each tree, this location will be lost when the stake is pulled and the hole dug, unless a planting-board is used. This is a thin board 3 to 4 inches wide and 4 to 6 feet long, with a notch at its centre and at each end. Before digging the hole, the planting board should be placed on the ground with a notch in the centre against the stake. Then a stake should be driven in the ground fitting in the notch at each end. The board should then be lifted, laid aside and the hole dug. The board is then returned to its place and the tree stood in the notch, the exact original location of the stake.

This is an accurate method of placing the tree, but many consider it too slow to be practical in large fields. In large fields the sighting method is usually to be preferred.

"For convenience and rapidity, two men can work together in planting the trees. One man should stand the tree in its proper place in the hole and carefully spread out the roots in their natural direction. Then the second man should throw in some loose, moist surface soil, a little at a time, so that it thoroughly covers the roots on all sides, underneath as well as above, and especially under the crown of the tree. After this has been done and the ground is tramped firmly, the hole may be filled and be tramped more rapidly. Finally, the soil should be left mellow at the top, so that it will not bake and permit much moisture to escape.

"Trees planted on locations exposed to strong prevailing winds should be leaned toward the wind slightly, or else be supported by a strong stake. This avoids lopsided rows so often seen on exposed slopes."

Some of these remarks may be old, but they are ever new to the man seeking information, and should be carefully digested by readers of *The Fruit Magazine*.

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

GENERAL LORD AYLMEER, who has been here on a business visit, was seen by the representative at Ottawa of *The Fruit Magazine* on the subject of fruit development in British Columbia. Lord Aylmer has taken up his residence permanently in the Pacific province and is interesting himself in various industrial development enterprises, including fruit culture—an industry which is attracting a great deal of attention in this part of the country. A question that is frequently asked by people here, who are thinking of taking up land on the Canadian Pacific coast, is

whether there is a safe and sufficient market for British Columbia fruit and fruit products, and likely to be, in view of the steady extension of the business and the vigorous efforts that are now being made to increase the area of fruit cultivation? Lord Aylmer, in reference to this said: "We are not at present able to produce sufficient fruit to meet the demand, nor shall we be for many years to come. Since the close of the past fruit season we have had to buy imported apples from the neighboring fruit states, the home output not being equal to the requirements of Canadian buyers. When

apple-growers are obliged on this account to have recourse to foreign imports to supply the wants of their own families, although the output of their orchards is immensely increasing, year by year, as the productive areas are enlarged, the question of markets would seem to have been satisfactorily solved. The reputation and superiority of our fruit and the conditions of production in British Columbia and elsewhere are such that British Columbia fruit-growers must always enjoy important advantages in the sale of their products."

"Then you are not likely to come back east to live yet awhile?"—"I cannot imagine anything that could induce me, or any member of my family, to throw up the attractions and benefits of our home in the west," replied the General. "The province of British Columbia is destined to a future of great prosperity. Its wealth in minerals, fruits, lumber, and valuable natural products of all descriptions ensures that. The country abounds in splendid scenery; the climate is as near perfection as one can imagine. Nothing that any reasonable person could desire is wanting except more capital for developments, for which we must come east of the Rockies."

"You have interested yourself, General, in industrial undertakings?"—"Yes, I am here in connection with business of that kind. British Columbia is full of opportunities for the profitable investment of money. Whenever you want information on the subject come or send to me. I shall gladly respond."

"I suppose you have heard of *The Fruit Magazine*?"—"Yes, not only heard of it, but we take it and greatly appreciate the splendid hints it gives to fruit-growers and its up-to-date get-up in other directions."

It will have been noticed by the readers of *The Fruit Magazine* that a general feeling of confidence in the ultimate triumph of the reciprocity agreement between the United States and Canada predominates in official circles both sides of the line. Opposition is of course active, but the belief prevails that discussion will clear away many misunderstandings. As far as Canada is concerned, no one sup-

poses for a moment that the government can be defeated in parliament on this measure. The ultimate fate of the agreement in Congress is another matter, but everyone knows it is quite settled at Washington that should events render it necessary, a special session of Congress will be called to deal with the issue, and in the meantime it is claimed misapprehensions will have been removed by explanation and discussion and the way will have been cleared for ratification and a fair trial of the experiment. For after all, there is nothing in the agreement to prevent its being promptly abandoned if either party finds results disappointing.

Mr. Fielding looks for a satisfactory solution of the situation at Washington. In his speech on Mr. Monk's motion condemning the government, for what the mover called undue haste in concluding the agreement without consulting the people, the Minister of Finance, it will be remembered, used these words: "A happy combination of events favors approval of the agreement at Washington. I have very strong hopes that the President will be able to overcome the opposition there. But whether he succeeds or not, we in Canada will do our part"—a statement that elicited loud and continued demonstrations of approval on the Ministerial side of the House. "And so doing," Mr. Fielding declared, with notable emphasis, "in all future negotiations we will find our position stronger than ever before." What does this last declaration mean but that, in the event of reciprocity in its present shape being defeated at Washington, a further attempt to effect an agreement in some other form, based on compromise not less favorable to Canada, but modified perhaps to meet to some extent the hostility of certain interests in the United States, would be made, and made with good prospects of reaching a mutually beneficial understanding?

And as to hasty action on the part of the government of Canada, Mr. Fielding claims there has been no unseemly haste, and the procedure in parliament is a protection against anything of the sort. There have been preliminary discussions and there will be the three readings of

the bill, at every stage of which the measure can be fully debated, and abundant opportunity will be furnished for considering the matter in all its phases.

Assuming that the reciprocity agreement carries at the present session of the parliament of Canada, it will not be in operation so very long before the people of Canada may show their disapproval, if they so desire, of the action of the government, by turning out the ministry and putting another in its place. Mr. Patterson, Minister of Customs, also speaking in the House, said the people of Canada would have an opportunity to pronounce upon the agreement at no very distant date, at a general election. An appeal to the people before ratification is what some people are working for here in Ottawa and elsewhere throughout the country.

In the documents brought down to parliament in connection with the reciprocity agreement, the questions on the order paper and the motions on file, the fruit interests of the Dominion have naturally come very prominently to the front, this growing industry being one of those closely touched by the tariff and free entry. And, by-the-bye, Sir Wilfrid Laurier, in his reply to the big eastern fruit deputation, made a reference to the very question, in effect, that was raised in the last issue of *The Fruit Magazine*, of sacrificing one to serve another. Sir Wilfrid pointed out that while fruit-growers and farmers from one section demanded free entry, like interests from other sections asked that the barrier be kept up, and that no country could be governed to the satisfaction of all unless there was some sacrifice, some compromise. Confederation was effected by compromise. "My last word to you," he said in conclusion, "is that it is absolutely impossible that any law, any tariff, can, in the face of conflicting demands, be made acceptable to all. We must make concessions for the common good of the country." How far this principle has been carried out by the reciprocity agreement is the point which discussion in parliament must decide. Supporters of the government in the House, with not many exceptions, take the ground that

free entry of fruits and fruit products will have the effect of cheapening the cost to the consumer, while on the other hand immensely increasing consumption and the volume of trade, equally to the benefit of the industry. Members hostile to the agreement, on the other hand, oppose free entry as a deadly blow at the interests of fruit-growers and the development of the fruit lands, the only possible outcome of which must be the infliction of permanent injury to a most promising feature of Canadian prosperity now in its infancy, and destined under previous conditions to make exceptionally rapid growth and profitable returns for the capital invested and labor performed.

In connection with the opinions of prominent men that have been published so far at the capital against the agreement, perhaps nothing more forcible or more effective has appeared than the clear and vigorous presentation of the case of the British Columbia fruit-growers by Premier McBride at Victoria. Mr. McBride, as wired here, took the ground that the proposed tariff agreement would place the markets for fruit largely in the hands of the Americans, who are able even under existing circumstances to compete with the fruit-growers, not only of British Columbia, but with those of Eastern Canada. The fruit-growers south of the line, as Mr. McBride contended, are able at present to produce fruit at a less cost than can be done in British Columbia, for in the United States the industry is old and well established, with large areas of cleared land, while British Columbia is endeavoring (and up to the time with marked success) to settle her fruit-lands, and requires a tariff advantage to secure good markets. The removal of this advantage, from Mr. McBride's standpoint, will most seriously affect the efforts that are being put forth to settle and build up the province. This is a fair and easily understood outline of the conditions as they are represented to exist in British Columbia. It appears to be attracting much attention, not only at the capital, but throughout the fruit-growing districts of Ontario, Nova Scotia and Quebec, and it certainly furnished the basis of some of the strongest arguments brought to the attention of the

government by the latest fruit deputation to the Dominion government.

An impression seems to have been somewhat widely entertained that the understanding arrived at between the governments at Washington and Ottawa was, in effect, a treaty merely shorn of the customary formalities. The "Citizen" (Conservative) has noticed the fact that in discussing the tariff agreement "the tone adopted by some newspapers would lead to the belief that the two countries had in contemplation an iron-bound treaty." These newspapers are reminded that the arrangements can be terminated by either side at any time. The "Citizen" adds that "the understanding, viewed in the light, hardly merits the gloomy future predicted as a result of closer relations by parties on both sides of the line," meaning the political union of Canada and the United States.

The following, referring to inferior shipments of Canadian apples to Cuba, appears in the weekly report of the Trade and Commerce Department: "In reading the reports of Canadian fruit, and particularly apples, to the English market, writes Commissioner E. S. Kirkpatrick, from Havana, there is given an impression of the great care which is taken in handling this fruit, and also of thorough inspection. These facts have caused wonder that in the export of fruit to Cuba such an utter lack of care and judgment should be shown on the part of shippers. There is probably no place in the world where good fruit is more in demand, or where better prices rule than in Cuba. Poor and inferior fruit can hardly be given away. At the request of an importer, Commissioner Kirkpatrick recently inspected a shipment received from Nova Scotia. It was scarcely believable, he wrote, that these were exported with any hope of returns. He entered into correspondence with the shippers, and they replied that while Nova Scotia apples were of the best, the farmers were very behind in packing, and that fruit of inferior quality should not be permitted to be exported. Mr. A. McNeill, chief of the fruit division of the Department of Agriculture, to whom the matter was referred,

stated that the trouble was due to the trade being carried on largely by a few indifferent and comparatively irresponsible schooner owners. While no really reputable apple dealer had seriously undertaken the trade, it was commencing to receive the attention it deserved. Steps were being taken by the Central Co-operative Association of Nova Scotia to place the trade on a proper footing. 'I wish that our Canadian exporters of fruit might realize,' comments Commissioner Kirkpatrick, 'that while nothing but the best will be accepted here, yet the best will at all times be in good demand.'

Mr. E. D. Arnaud, Canadian Trade Commissioner at Bristol, England, reports the following prices for Nova Scotia apples on the local market: Golden Russets, No. 1, 29s; No. 2, 25s to 28s; Baldwins, No. 1, 25s; No. 2, 22s 6d; Spies, No. 1, 23s; No. 2, 21s. Box Apples: Baldwins, 10s; Ben Davis, 9s 6d; Spies, 11s.

WASTING TIME

WHEN I was young I wasted time in sweating o'er the prose and rhyme of grand old bards and sages, men world-famed as masters of the pen. When these old masters had a thought they hid it 'neath a ton of rot, and one must dig and claw and rake to find the meaning of each break. The high-brows told me I must scratch around that verbal garden-patch if I would store my youthful mind with thought-gems, brilliant and refined. And all that work was thrown away; and now that I am old and grey, no longer by ambition fired, the grand old writers make me tired. I do not care how great his fame, I care not for a poet's game, unless he makes his meaning clear; if I must dig for half a year, to find what he is driving at, I'll throw his volume at the cat. There is no sense in writing dope that makes the reader dig and grope. The writer who is truly great is he who dishes up his freight of burning thoughts in words so plain that any man with half a brain gets wise to what he has to say, and reads and puts his book away. The skilful craftsman turns his hand to writing things men understand.

—Walt Mason

The High Cost of Living

Some Reasons

MUCH is being written on the subject of the high cost of living these days, and many seasonable examples are being given as to the causes.

Somewhat out of the ordinary and very much to the point are a few indirect reasons which follow, and for which we are indebted to the "Woman's Home Companion."

These little stories are verbatim reports of conversations actually overheard. They have not been altered one iota and are presented without editorial comment, as interesting sidelights on the much-discussed cost of living.

"Mr. B—— is So Particular"

Mrs. B—— stood midway between the butcher's block and the cashier's booth. The butcher was behind the block, the proprietor was behind the butcher.

"Yes, Mr. B—— said the steak was a disgrace to any well-regulated house. And if there is one thing I pride myself on, it is good management. Was it a Delmonico? You know I told you always to send me Delmonicos. Mr. B—— says they are the best for small families!"

"We were out of Delmonicos, but I sent a fine porterhouse."

"You see?" Mrs. B—— exclaimed, this time to the proprietor. "It was his fault. And everybody talking about substitution, too. If I order steak again, I want a Delmonico or nothing."

"We'll see that it does not happen again, Mrs. B——," interrupted the proprietor. "Is there anything today?"

"You have no idea how particular Mr. B—— is. Now I want two pounds of lamb for stew—"

"Shoulder or chuck?" inquired the butcher.

"I don't know. Which is the best?"

"Well, shoulder is a little more delicate—and Mr. B—— being so particular—

then we have the regular stewing pieces a little cheaper, at twelve cents—"

"No, that sounds too cheap. Send me the—what did you call it? Oh, yes, shoulder! And please trim it carefully."

"I'll trim it, of course," interrupted the butcher, with a glance at the proprietor, which Mrs. B—— failed to see because she was scanning her marketing list.

"Oh, yes—and send me half a ham for boiling."

"Which half?"

"The best half, of course," was the reply, "with the least bone."

"Then you want the big end—"

"Oh, but that's mostly fat, isn't it?"

"It slices to better advantage, and it's sweeter. The other end is thinner, but has more bone—"

"Well, you must have fat hams and lean hams. Send me the big end of a lean one. No, I can't stop to look them over—I'm due at my dressmaker's this minute." (Turning to proprietor.) "Now remember I am a busy woman—I can't spend my time here picking over meat. I hold you personally responsible for filling my orders properly—and if you don't, I'll take my trade elsewhere."

"We'll not let that happen," replied the proprietor, obsequiously. "Remember, John, the best in the place goes to Mrs. B——."

And Mrs. B——, mollified, swept out of the shop—her day's marketing done.

Gold Lace and Halibut

Mrs. J—— bustled into the market with an out-of-town guest in tow.

"My dear, you wouldn't believe how that girl neglected the corners—you know what I mean. She's the sort that dusts the mantel without lifting the ornaments or photographs and forgets to polish the pipes when she cleans the bath-room."

"Have you any nice legs of lamb this morning?"

"Well, there was nothing for me to do but to take the bull by the horns. I walked her into the library and stood there while she picked up every ornament she'd been wiping around. But I know she'll do the same lazy trick tomorrow—oh, dear— Oh, yes, that looks like a very nice piece of meat. . . Henry does love roast lamb with mint-sauce—and it's so easy to please a man who knows what he wants. Only, he still has those dreadful attacks of gastritis—the doctor says . . . What's that? Why, it was only eighteen cents yesterday. Dear me, there's no telling where prices will go next. Yes, it has a nice color. . . I'm so glad you're going down-town with me this morning, Mary. I can't decide what sort of net to get for my wistaria broadcloth— Yes, those embroidered strips are lovely—if the coloring is soft enough. . . How much did you say that weighed? Six pounds light? Be sure you trim it nicely, and don't forget the mint—a nice fresh bunch. . . Mary, I've an idea a touch of gold lace just below the net would be dear! . . . Oh, yes, and don't forget to send me some nice halibut tomorrow. Oh, enough for five—about two and a half pounds. Not too thick—but very fresh."

And Mrs. J—— paid for six pounds of lamb without realizing that the word "light" which the butcher had spoken so nonchalantly meant in reality a shortage of three ounces, to say nothing of the lavish trimmings carelessly tossed under the counter to be sold later to a buyer for a soap-plant.

"An Obliging Butcher Saves You Worry"

She was very young, very fair to look upon and very obviously newly married.

She raised appealing eyes to the butcher.

"Mrs. M—— markets here, doesn't she? My husband's mother—

"Well, what is that meat she buys that comes to the table covered with bread-crumbs and tomato-sauce? No, I don't think it is that—there are no big bones—just here and there a little round bone about the size of my thumb. Oh, yes, that's it! Veal-cutlets! I thought you'd know—Yes, Mr. M—— wants some just like

his mother used to have—and they must be very tender and juicy—he likes meat that way. Are they nicer thick or thin? How does she buy them? Oh, never mind, just cut them medium thick—I guess two pounds will be enough—there are only two of us, you know—and I never can tell when Mr. M—— will bring home company. I like to be prepared—and then you can warm it over for lunch, anyhow. Yes, make it two pounds. And tomorrow I want a chicken, the kind you roast, and it musn't be a cold-storage chicken, because Mr. M—— says they are really dangerous. I told him you never carried cold-storage meat, and you don't, do you? Yes, that's what I like about your market—it always looks so shiny, with no nasty, drippy meat hanging around. That's awfully nice of you—I'm coming over early some morning and let you give me a lesson in cuts. I think every woman ought to know about cuts, just as she knows about the right kind of hair-pins and shoes and things!"

When she joined the friend who was waiting for her at the door, the appeal in her eyes had changed to relief and gladness.

"Housekeeping isn't really so bad as I thought it would be. An obliging butcher can save you so much worry, and when you have an account you don't have to wait for change. It's really very simple."

The Price of Polished Fruit

At a fruit-stand a housewife was buying apples. She, too, had stopped to market, en route to a more interesting appointment. She poked a neatly gloved finger into a basket of cooking-apples.

"They don't look very tempting or nice. What is the price—ten cents a quart, did you say?"

The apples were dusty and of irregular size.

"We have better ones on the stand—at fourteen cents—specially picked."

The customer moved over to the stand. The "specially picked" apples had come from the same basket into which she had dipped. They had been selected in regular sizes and polished, then arranged in an attractive pyramid.

"They do look better. Send me a quart!"

Truly the laborer is worthy of his hire, if it is only polishing cooking-apples!

The Mistress-Who "Didn't Bother Much"

She was a trim-looking maid in black mohair with immaculate collar and cuffs, a little servant-girl here whom any housewife might envy her neighbor. Evidently the grocer's clerk found her good to look upon.

"How do you like your new place?" he asked.

"Oh, it's grand. They go out to dinner a lot. And as long's I keep things clean and serve meals on time, she don't bother me much."

"You're looking fine—"

"Oh, come off, now—no jollying. I want some breakfast-food. Got anything new—something easy to cook?"

"I'll send you two kinds. What else?"

"A pound of prunes. Ain't that queer? He wants prunes for breakfast—and fresh fruit's so much easier to set out. Well, send me a pound—I don't know which kind—send me some good ones. No, I don't care much for picture shows. I like straight vaudeville better. Did I tell you about the olives—a bottle of queens, and some seedless raisins—the biggest you have. . . . Oh, go 'long—you say that to every girl. . . . A pound of butter and a jar of dried beef and a nice can of peas. . . . Yes, it's a charge account. I wouldn't market in a place where they don't run accounts. Fussing with change and accounting for pennies makes me sick. A lady don't ask it of you."

And the ordering for the mistress who "didn't bother much" was done, and not a single price demanded.

Ordering by Proxy

At a grocery store where vegetables and fruits are also on sale, this:

"Mamma wants you to send her a dozen eggs, half a pound of American cheese, a box of some sort of sweet crackers, six bars of laundry-soap, some silver-polish, a can of tomatoes, half a dozen nice sweet oranges, a good head of lettuce, some bacon, you know the kind that

comes in a flat box, all cut—a package of macaroni—and give me a cake of sweet chocolate to take to school— Oh, yes, and a jar of small sweet pickles, and get them over in time for lunch."

And the ordering for another family in moderate circumstances was done for the day.

"Salesgirls Hate a Woman Who Haggles"

The two women paused beside a bargain square on which fine gauze vests were offered at less than two-thirds the usual price.

"They look real fine—you can generally tell by the sort of ribbon run in them — This is wash silk—cotton tape is a dead give-away—"

"Yes, they are an unusual value," glibly interrupted the salesgirl. "What's your size?"

"No. 3. Oh, dear, I wish it wasn't bad form to wear colored undervests—those blues and pinks are just ducky. You can send me six C. O. D." (To her friend.) "I call that economy—you can always lay them away for summer."

The salesgirl whipped six vests from a box, and the friend who had not spoken picked up one and glanced at it.

"See here, dear," she said suddenly. "There's a defect in this vest."

"Well, what do you think of that?" demanded the bargain-seeker impatiently. "And you said these were a special value."

The salesgirl was annoyed.

"Well, of course, if they didn't have defects, they'd be the regular price."

"Honestly, you can't trust anybody these days," said the disappointed bargain-hunter, as she cancelled the order.

"Still, you know you *can* look at what you buy," remarked the friend.

"But it looks so cheap—and these smart salesgirls hate a woman who haggles. They are lots more respectful if you are a charge customer."

Why She Bought the Flimsy Satin

"Haven't you something in the same shade at a lower price?"

These two women were seated before the counter where evening silks are displayed in glittering array.

"Of course, but not in as good a quality. We guarantee this grade. You can have it cleaned, or dyed, or made over, and it is really very much cheaper in the end."

"With styles changing every six months, I don't think it pays to have things made over."

"Well, of course, that is a matter of opinion, madame," replied the clerk, reaching for a bolt of cheaper satin. "But some of my customers hold that dress-makers charge just as much to make up cheap goods as the best, so it pays to buy high-grade silks and have them made by the dressmaker in considerably less extreme styles."

The flimsy satin at the low price was finally chosen, and the customer walked away, remarking to her friend:

"I suppose he thought he could argue me into buying the more expensive satin. But I say that in this day what you want is effect—lasting quality doesn't make anybody sit up and take notice of your clothes, and you might as well be dead as out of style."

And yet in all probability every one of these women, coming from homes of very moderate means where one servant is kept, or none at all, will tell you that the cost of high living is up to the tariff-tinkerers.

Who is Responsible?

The tariff-tinkerers and the food trusts have broad shoulders. They deserve a large proportion of the blame for existing economic conditions in the household. But equally responsible for the high cost of living is the inexplicable indifference as a buyer of the otherwise efficient housewife. It is said that the wives and mothers of the United States have been directly responsible for the result of certain state elections where local option was the issue; yet these same women, the home-makers of the people, do not see a situation by which millions of dollars are filched from household exchequers every year.

The officials, national, state and municipal, who are making the present fight for honest weights and measures, declare if they had the hearty co-operation of

housewives, they would win out in months instead of years. When Mr. Clement Driscoll was commissioner of weights and measures in New York City, he made the statement that the trade custom of short weights and measures was costing the citizens of that city not less than thirty million dollars a year. Mr. Fritz Reichman, superintendent of weights and measures for the state of New York under the Hughes administration, reported that his investigation of conditions in three hundred and four shops located in two principal boroughs of New York City resulted in finding fifty-nine per cent. of the scales, seventy-one per cent. of the weights and eighty-two per cent. of the capacity measures incorrect. The resultant shortage represented to the customers a loss varying from three to seventy-five per cent.

Astonishing Figures in Poughkeepsie

Admitting that New York City does not represent the nation in thrift or the lack of it, move on to Poughkeepsie, a city of forty thousand inhabitants, most of whom are people of moderate means. Here thirty-seven stores were visited and only four had correct measuring and weighing apparatus. In a near-by village, which could boast of only nine stores, eight had dishonest apparatus.

How is this accomplished? In such a variety of ways that the ingenuity and resourcefulness thus represented would give brilliant results if directed in a better cause. As things exist, these methods are a disgrace to the intelligence and shrewdness of the American housewife.

Short Weights in Bread and Butter

One of the most flagrant, though the least discussed, abuse of weights and measures exists in the sale of what is considered the staff of life—bread. Presumably a loaf of bread at five cents weighs a pound. Whether this pound shall consist of sixteen or fourteen ounces is a mooted question among bakers. In reality, most of the loaves weight twelve ounces or less, and this "pound" has been found in many bakeries to drop to eleven ounces, in which case the real selling price or the cost to the consumer is at

the rate of seven and three-tenths cents a loaf or "pound." In forty-eight bakeries visited by the New York State Superintendent, 83.3 per cent. showed loaves weighing less than sixteen ounces and 45.2 per cent. of loaves under fourteen ounces. The cure for this is a uniform *weight*, not *size* or *shape*, for bread-loaves the country over.

Out of four hundred and thirty-five pound-prints of butter tested in forty-four shops, this same superintendent reports that three hundred and eleven were short, and the total shortage represented to consumers a loss of six pounds two and one-eighth ounces.

In reweighing the tub butter sold in wooden trays or plates, it was found that the weighing of the tray with the butter represented a loss varying from one quarter of an ounce to one and one half ounces on the pound. In extreme cases a pound of tub butter was short four ounces.

Not all Yards are Thirty-six Inches Long

In dry-goods stores the greatest evil is said by inspectors to lie in false marking of goods, from the thread in which there is frequently a shortage of twenty-five per cent. to the expensive cloths, velvets and silks which, though branded thirty-six or twenty-seven inches wide, when measured, show as low as thirty inches or twenty-two inches instead. Of twenty-eight stores visited on a certain tour of inspection, a state official discovered that the maximum shortage on yardsticks was one quarter of an inch, this being found sometimes on the whole length and sometimes on the fractional parts of the yard. On counter tacks, such as the average clerk uses, the maximum shortage was more—half an inch.

Doctored Measuring Vessels

In the purchase of what is known as green groceries, vegetables and fruit, the customer loses in every direction. Measures are dented in, thus holding less beans, peas or berries. A favorite trick of the smiling foreign dealer is to have paper bags which, he maintains, hold a pint, a quart, or more, but which the housewife would find running decidedly

short if she measured her beans, her cranberries, or her apples on reaching home. Again, the bottoms of wooden measures and baskets are padded or raised in convex shape, or sometimes a number of large nails or other obstructions protrude from the sides of the measure and prevent the purchased articles from sinking down and completely filling the measure. Uninspected berry-boxes cost the housewives thousands of dollars every summer, and the dealer no longer troubles himself to sell fruit by the quart or pint. He says simply that a "box" of strawberries is worth so much, and the modern housewife does not realize how much less she is getting in actual measurement than did her mother or her grandmother before her. In some states, notably Massachusetts, standard fruit-boxes are demanded, but the only cure for this national evil is national standardization.

False Scales and Substitution

But perhaps it is in the purchase of meat that the housewife stands back and allows herself to be most flagrantly cheated. The crudest system of cheating in handling meat is accomplished by the use of false scales or substitution.

Scales are doctored in various ways, from the very simple method of allowing them to become so dirty that they could not weigh correctly, to stuffing metal objects under the tray and weighing down the balance with nails attached to wires.

Substitution is practised largely against women who stop to see their meat weighed, but do not reweigh it when it is delivered at the kitchen door. If a two-and-a-half pound chicken is sent home when a three-pound chicken was ordered, seen weighed and paid for, the housewife is out half a pound, and with chickens selling at twenty-two cents this means just eleven cents lost on a single meat order.

If the unthinking mistress weighs the chicken when it is delivered and reports an even greater shortage to the butcher, he will explain that this is due to the manner in which she demanded that the fowl be delivered—namely, drawn, and with the head and feet removed. The thrifty housewife removes all this in her

own kitchen, and when she orders a three-pound fowl she gets three pounds. And she is not the person who is mentioned in the above conversations which certainly do invite, to use slang, "flim-flam."

Where the Inspector is Helpless

Inspectors have no difficulty in dealing with the butcher who doctors his scales or substitutes light-weight cuts for the ones ordered, but there is a far more dangerous class of dealers, whose dishonest methods only the housewife herself can detect. The butcher who obligingly turns the scale around so that his customer may see the exact weight is a smooth trickster, for he "weighs his hand" in with the meat. When he touches the foot of a fowl or the end of a leg of lamb to "steady the scales" he adds anywhere from an ounce to three ounces on the customer's bill. When he says suavely "five pounds light," if the customer does not inquire "How many ounces light?" he adds to the profit of his day's

business. The butcher who says obsequiously that, of course, his customer wants her meat properly trimmed and does not send the trimmings home will probably sell that same customer tomorrow the suet or the bones for stock which he trims from her purchase today. By experiment, inspectors have found that three-pound steaks are reduced to two in the process of trimming, and the trimmings are saleable meat which the customer may buy next day as chopped beef for Salisbury steak.

The trimming sold to dealers who make a business of visiting meat-shops for this purpose daily, bring from five to ten cents a pound. The better grades of trimming, resold to other customers, bring from ten to twenty-five cents a pound.

And when you come to analyze the situation, who is at fault, the small merchant who trades on your ignorance or the housewife who invites petty thieving by her own neglect?

The Reciprocity Agreement

A BRITISH COLUMBIA VIEW

To the Editor of "The Fruit Magazine"

ALTHOUGH I am exceedingly busy, having been absent from my office for nearly two weeks, I cannot consistently refuse to give you a line or two expressive of my views on the reciprocity agreement now before the Canadian people.

I may say at once that I think it is one of the greatest blunders ever made by any Government in the history of this Dominion. I have read very carefully your own views on the subject, which I regret to see are non-committal, and therefore a disappointment. The fruit-growers had a right to regard you as a very influential and able champion of the horticultural industry of this province.

The successful efforts that you made in organizing the First Canadian Apple Show earned for you the gratitude of all

the fruit-growers, without distinction of party, but I am afraid that the attitude which you have taken regarding this very important matter will have a tendency to neutralize your former efforts. No one will regret this more than myself.

My first objection to the reciprocity agreement is that it discriminates unfairly against British Columbia fruit-growers. The conditions south of the boundary line are greatly to the advantage of the American fruit-grower. In the first place, the great State of Oregon was settled sixty years ago by agricultural immigrants. Every settler was donated 320 acres of first-class prairie land. If he were a married man, his wife was donated a similar number of acres; that would be 640 acres of land for each man and his wife. If the farmer had a child of age, whether male or

female, he or she would receive another 320 acres. This land was ready for the plough, and all the settler had to do was to begin to break it up and plant his trees, so that to my certain knowledge Oregon had a fruit export trade fifty-six years ago. The Government of Oregon was composed largely of agriculturists. The policy of all the governments from then till now has been the development of agriculture and horticulture.

This is very different from what we have experienced in British Columbia. Our province was settled largely by miners, and we have only to look into our statutes and the records of the legislature to be convinced that the mining industry received the greatest share of the attention of the Government.

We had no agricultural policy worth the name until the advent of the McBride Government. Since that eventful day we have been making very rapid progress in all lines of agricultural development, horticulture of course taking the lead.

The British Columbia fruit-grower in most cases is obliged to clear his land and spend a year or two in getting out stumps and roots and sweetening the soil in preparation for his trees. You will thus see that the initial expenses incurred in planting an orchard in British Columbia are greatly in excess of our competitors.

It is true that the farther north you can grow deciduous fruit the better the quality, especially apples, so that we have nothing to fear as regards quality, but the cost of production bulks very largely in favor of the American orchardist, and should have been considered before the Government entered upon this reciprocal exchange.

So far as our British Columbia markets are concerned, we may not suffer very much from competition, but when we meet our American competitors in what justly belongs to Canadians (I refer to the tier of provinces east of British Columbia), we find a very unfortunate condition of affairs.

By Dominion regulations, the triple-cross, or No. 1 quality of apples, may carry ten per cent. infection with scale

or Codling Moth, and there is no restriction on its sale. It may be asked, Why not compel the imported fruit to be absolutely clean and free from infection, as we do in this province? My answer is that the Ontario and Nova Scotia orchards have been so badly neglected that it is practically impossible for them to put a higher grade than ninety per cent. clean in the Northwest Provinces, so that if the Dominion Government excluded all infected fruit, as we do in British Columbia, the Ontario article would not be found in competition with us.

We are thus penalized to the extent of ten per cent. by the neglected condition of our eastern Canadian fruit-growers. I fear that very much of this unfortunate condition of affairs can be laid at the door of the Agricultural College of Ontario. This is a dreadful responsibility, but I believe the charge is absolutely correct. There has been no systematic inspection of fruit in the eastern provinces up to date. The result is that very badly infected fruit has been unloaded in every province of the Dominion except British Columbia. We cannot, and will not permit infected fruit to come into this Province. There is no place for it. We cannot permit our orchards to become so badly infected that the best we can hope for is ninety per cent. No. 1 clean fruit.

We have demonstrated the fact that we can and do grow one hundred per cent. clean fruit, and I think it is our best policy to keep up our standard. The best is sure to win ultimately in the race, but in all fairness to British Columbia we should not be met in competition with ten per cent. diseased and infected fruit. This is a point of considerable importance, and I am surprised that it escaped your attention in sizing up the situation.

Another objection to the proposed reciprocal agreement is that it tends to the introduction of Free Trade, and if there is any political heresy that has been a curse to Canada it is that of Free Trade. I had some experience of this in my early life.

When only a boy I immigrated to Vancouver Island for the express purpose of engaging in horticulture. I was possessed

of some information of the excellent character of the climate of Vancouver Island. The Mainland was very little known then: it was described to me as in every way suitable for fruit-growing. When I arrived in Victoria, after spending some weeks in travelling over the island, I found the conditions exactly as they were described, but unfortunately Vancouver Island was committed to a system of Free Trade, as they have it in England. Victoria and Nanaimo were free ports. American apples were being put on the market without any expense other than transportation charges.

A number of Canadian boys, myself amongst the number, who intended to have engaged in agriculture and horticulture, explored Vancouver Island, and then visited Oregon, in order to satisfy ourselves as to the prospects of growing fruit under British Columbia conditions, in competition with the well-organized American fruit-growers. We gave up the business as hopeless.

During the years from 1860 to 1870 there was a large immigration of Canadian farmers to Vancouver Island, nearly all of whom emigrated across the boundary because the conditions were such they could not hope to compete with the Americans, who were already well organized and established on their farms. Thus a number of our best farmers were lost to British Columbia, and this further explains the delay in agricultural and horticultural development of the Province.

During the Mackenzie administration, of between five and six years, public sentiment was largely in favor of Free Trade. This also retarded Canadian development, and had a very disastrous effect on manufacturing.

During the five or six years of the administration of Mr. Mackenzie (who, by the way, was one of the cleanest politicians that appear in the history of Canada, a man of integrity and good sense generally, but a statesman, never) no fewer than 1,264 manufacturing establishments closed their doors and went out of business. I have this record on the authority of James G. Blain, Secretary of State for the United States.

Now it must appear to every thought-

ful man that there has been in the minds of Canadian manufacturers and Canadian agriculturists the ever-present danger of the Government that is now in power drifting into either Free Trade or Reciprocity. This has acted as a deterrent in the development of our horticulture and the development of Canadian manufacturing, and a further explanation as to why greater progress has not been achieved in British Columbia horticulture and manufacturing.

During recent years this was gradually disappearing in the minds of both manufacturers and producers. It was felt that we were perfectly safe from unfair competition, whether the Liberal or Conservative party were in power, but this retrograde movement has a very disturbing effect, without any compensating advantage as far as I can see.

The British Columbia fruit-grower is still obliged to pay duty on many of his implements. During the present week I have had to put up a hundred dollars duty on a power sprayer. Early next month I expect to repeat the process. Last summer we paid two hundred dollars duty on two power-spraying machines. That amounts to an expenditure of four hundred dollars, which the American fruit-grower will not have to expend, so that there is that much in his favor.

Then again the insecticides. We have to pay duty upon fungicides and insecticides, ranging all the way from twenty to twenty-five per cent., and yet meet our competitors upon equal grounds. Surely there can be nothing fair about this.

Not only is the fruit industry discriminated against, but the dairying industry is badly hit. Our unequalled Canadian wheat goes into the United States free of duty. It will be milled there, and the American stock-breeder and dairyman will get his mill feed at a minimum price, plus the great advantage he has in the production of alfalfa and other fodder, which cannot be successfully cultivated in the Northwest Provinces—at least north of the boundary line. This cheap mill feed, plus American corn, alfalfa, etc., gives our American competitors immense advantages, with which the

Canadian farmer north of the boundary in the wheat provinces cannot successfully compete.

This reciprocity was granted largely on the demand of American wheat farmers who had worn out their own country in continual wheat-growing. They exhausted the fertility of the soil and found it would be to their advantage to migrate into Canada. They obtained land at a minimum of cost. They desire to repeat the process of continuous cropping until the land shall have been exhausted.

Surely it cannot be good statesmanship to yield to the demand of these settlers who come to obtain our virgin lands and exhaust them, and probably return to their own country enriched at the expense of Canada.

It is not generally known that the value of a ton of bran as a fertilizer, after having served its purpose as stock feed, has been fixed by the best chemical experts as ten dollars. Oil-cake meal has a higher fertilizing value. It is placed at eighteen dollars per ton after having served as feed for the animals. All these necessary means of restoring lost fertility will go south of the boundary.

I am surprised to find that according to the schedule published flax-seed is permitted to cross the boundary free of duty. Wheat is shipped out free of duty, but if the wheat is milled in Canada, the Canadian miller is penalized to the tune of fifty cents per barrel or twenty-five cents a cental.

If this is not the most unjust discrim-

ination against the Canadian miller, then there is no injustice anywhere in the world. Taking it all in all, it is the most ridiculously unfortunate agreement that was ever entered into in the history of Canada.

There is a silver lining in the cloud, however—that is, the prospect of the Government who agreed to this unfortunate arrangement having sealed its own doom, and when the Opposition comes into power, the chances are that our agriculturists and horticulturists will be abundantly protected, probably better than ever before.

As far as regards the policy of the British Columbia Government, I am glad to state for your information that we shall go on planting very select varieties of fruit. We shall spare no effort in putting the orchards of British Columbia in a perfectly sanitary condition, and thus improve the quality of British Columbia fruit. This temporary backset will not, I think, discourage the intending settlers, for long before the trees that are now being planted shall have come into bearing (and I am glad to say that there are many, as is shown by the returns of inspection for 1910, when 3,770,470 trees and plants passed through the inspecting station at Vancouver) we shall have a Government at Ottawa fully committed to the protection of the Canadian producer.

THOMAS CUNNINGHAM,

Inspector of Fruit Pests.

Vancouver, B. C.

If Love Were Always Laughter

If love were always laughter,
And grief were always tears,
With nothing to come after
To mark the waiting years,
I'd pray a life of love to you,
Sent down from heaven above to you,
And never grief come near to you,
To spread its shadows, dear, to you,
If love were always laughter
And grief were always tears.

But grief brings often laughter,
And love, ah, love brings tears!
And both leave ever after
Their blessings on the years;
So I, dear heart, would sue for you,
A mingling of the two for you,
That grief may lend its calm to you
And love may lend its balm to you—
For grief brings often laughter
And love brings often tears.

—Annie Johnston Crim.

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FRUIT DEALERS AND FRUIT-CONSUMERS

Volume III

APRIL, 1911

Number 1



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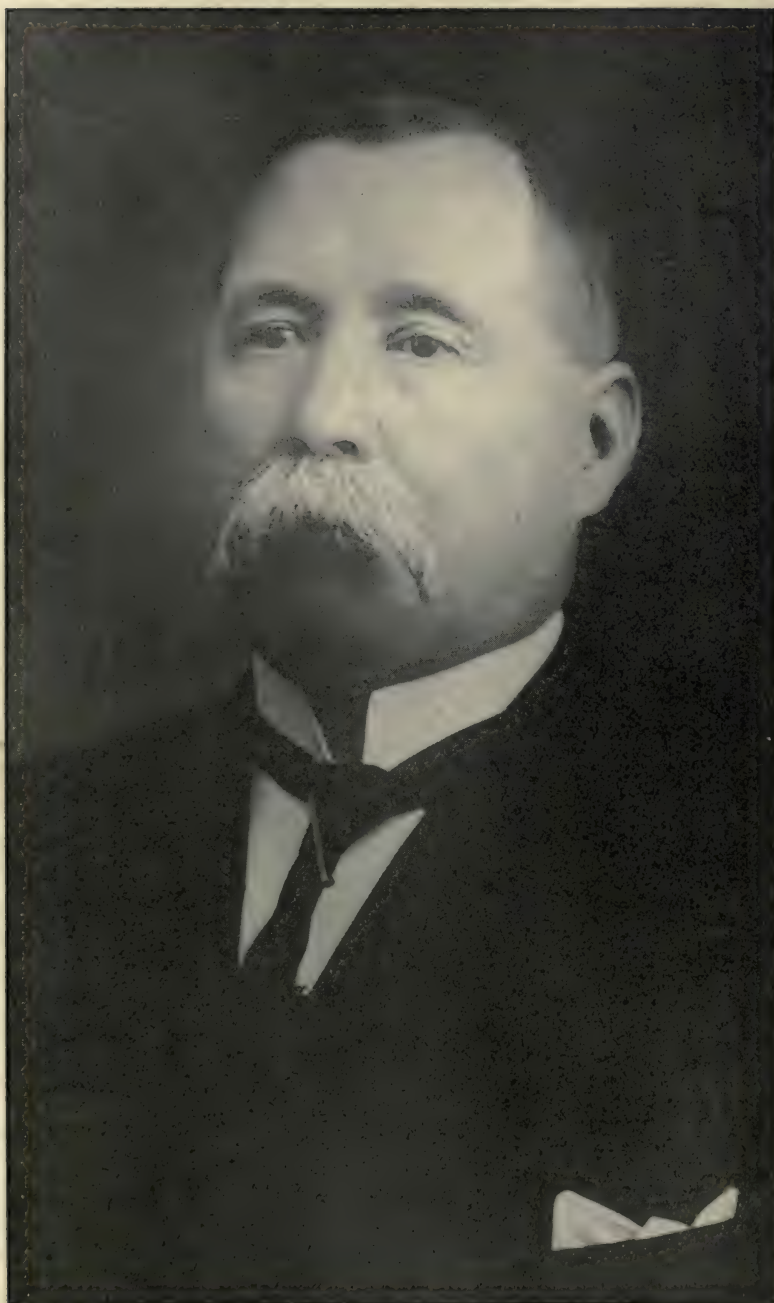
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HON. PRICE ELLISON
MINISTER OF AGRICULTURE FOR BRITISH COLUMBIA

The Fruit Magazine

Vol. III

APRIL, 1911

No. 1

A Glimpse of the Okanagan Country

By PROF. H. E. VAN DEMAN

LAST November it was my privilege to make a trip through the entire Okanagan valley, from its junction with the Columbia River, near Brewster, Washington, to its headwaters in Okanagan Lake. This had long been one of the anticipated pleasures of my western journeyings through the famous fruit-growing regions, and the opportunity was offered and most gladly accepted. Having two weeks at command between the judging of the apple show at Missoula, Montana, and the First Canadian National Apple Show at Vancouver, B.C., there was time to make the trip leisurely enough to see much of the great valley of the Okanagan and a few other sections. Starting northward from Wenatchee, Washington, I stopped to see the orchards along the Entiat, Lake Chelan and several other fruit sections in that state. At Oroville, which is almost on the Canadian boundary, the Similkameen pours its torrent of waters into the Okanagan. This is its chief tributary, and my way led up the valley of this rushing stream for many miles to the thriving town of Keremeos, in British Columbia. While the land in the valley proper lies beautifully for farming and fruit-growing, the mountains are very close and stock ranching and mining are the principal industries at present. But on the beautiful and fertile bench lands about Keremeos there are many orchards in the most flourishing

condition. Surrounded by protecting mountains, mild in climate and watered by streams that have their sources in rugged, snow-covered heights, there can be no more suitable place for growing apples, pears, peaches, apricots and almost any other fruit of the temperate zones. There, in pioneer days, when there were no neighbors other than the aboriginal Indians, Mr. Richter, a plucky and industrious German, planted the first orchards of that section. Now he has not only orchards, but a great farm and a home that might be envied by a prince. And it is not "out of the world," for the Great Northern Railway has built a branch that passes up the valley and is destined soon to reach the great terminus at Vancouver across the Cascade range.

From Keremeos to Penticton, at the foot of Lake Okanagan, I had the most delightful stage ride of my life. Although the way led over a mountain spur and through a narrow defile the road was good and the service all that could be desired. One who appreciates the grandeur of Nature would be charmed by the scenery.

At Penticton the southern end of the great Lake Okanagan fruit district is reached. There we took passage on one of the staunch little steamers that traverse the lake and carry the fruit to market that grow along its shores. Almost the entire borders of the lake, and in

some places for many miles back, the land is suitable for fruit-growing, and this is the chief occupation of the people. And it is no small territory, as some might suppose, snuggled in among high mountains and merely a sheltered spot, but it is extensive and constitutes a fruit kingdom of its own. The climate is remarkably mild for an interior region so far north. Peach culture is next to apple culture in interest and extent. There are places called Peachland and Summerland, and their names are not visionary. The orchards are planted on natural terraces or bench lands that rise by successive steps from the water's edge. The comfortable and substantial residences are proof of the success of the fruit industry of the Okanagan country, surrounded as they are by fruitful orchards and fields that produce almost everything that may be needed to live upon. There is a great tomato industry at one point, where this and other vegetables are grown, packed and shipped very extensively.

Kelowna is one of the principal fruit-growing centres. Here I spent two days most enjoyably and profitably, visiting the orchards and packing-houses. The first rise of land from the lake is miles in width and lies very low and flat, except in a few places, and has been planted to fruit more extensively than my judgment would approve. There are some very good orchards there, but many others are not flourishing. This land is splendid for growing many kinds of vegetables, berries and grasses, and should be devoted to them. It is a good dairy and farming region, but is not naturally suited to orchards. Back of this are the true orchard sections, and they are numerous, extensive, fertile and usually well supplied with water for irrigation. There are mountain streams and lakes that may be drawn upon for all the water that is needed, and it is pure and free from alkaline properties. The apple is the leading fruit grown there, and well may it be so, for everything seems to conspire to the production of apples of the highest grades in color, flavor and shipping quality. The most nearly perfect carload of apples that has ever been packed and shown was one of Jonathans that came from Kelowna to

the First Canadian National Apple Show at Vancouver last fall. It was practically perfect and took the first awards above all that was shown of any variety from anywhere.

Vernon is located near the northern end of Lake Okanagan and another smaller one, called Long Lake, and is the centre of another very extensive and prosperous orchard region. The famous Coldstream orchards, originally planted on the great estate of Lord Aberdeen, are there. I had the pleasure of looking over a large part of these orchards. They were planned and planted with the greatest skill and have been well cared for ever since. A part of them have been divided into small sections and sold to those who wanted little orchard homes of their own. There are hundreds of prosperous fruit farms now occupied by their present owners, making communities of happy people, instead of vast stretches owned and controlled by non-residents. This is one of the leading features of Hood River and other flourishing places. The land about Vernon is very fertile and there is more rainfall there than in many irrigated sections. The fruit attains the highest excellence in that cool climate and under what may be considered ideal conditions generally. Those who want to live where they will have all the advantages of good society and the natural conditions of prosperity need not go farther. As I looked down from the boulevard that skirts the blue waters of Long Lake, upon and across the subdivided Coldstream orchards, I was fairly enchanted. The scene is not only beautiful, but there is a deal of substantial prosperity in it.

From Vernon I went through the Spallumcheen Valley by rail to Sicamous Junction, where the main line of the Canadian Pacific Railway is met. This country is new, but is being developed rapidly into farms, orchards and vegetable gardens. The great city of Vancouver and the mining and lumbering regions all about make a market for all that can be grown. British Columbia is not a cold and barren mass of mountains and marshes, but a prosperous land of plenty and grandeur.

Pruning

By TOM WILSON, Dominion Inspector of Noxious Insects

NATURE'S laws are constant and unvarying in their operations.

Our knowledge of natural laws is derived from accurate observations of causes and effects, and science offers the systematized explanation of these observations. The science of pruning, therefore, gives the explanation derived from the accumulated knowledge of ages of observations and experiences of effects produced by manipulation upon the branches and other portions of plants. When we take into consideration the lengthened period during which pruning has been carried on, the general intelligence of the operators and the countless repetitions of similar processes ending in similar results, it is reasonable enough to presume that a sufficient number of facts have been observed to establish a complete science and determine principles the practical application of which can be readily understood and easily effected. But the frequent and apparently conflicting opinions that are constantly being expressed by cultivators and writers on this subject prove that the operation of pruning, in its various applications, is not generally performed from an intelligent standpoint.

Pruning is an operation of much importance in the management of trees, and complete success is not attained in fruit culture unless its principles are clearly understood. Plants left to Nature maintain a reciprocal action between the branches and the roots, and every branch and leaf removed must exercise an influence either injurious or beneficial; therefore, no one should remove a branch until satisfied of a reason for doing so, and foreseeing the influence and effects of such removal.

It is the opinion of many fruit-growers that the most uniform and satisfactory crops of fruit are produced in orchards where but little, if any, pruning has been done. While it is true that the

injuries to fruit trees and losses to growers from vicious and unnecessary pruning cannot be estimated, yet it would be wrong to assert that no pruning should be done. It is always judicious to thin out the tops of the trees when the branches become overcrowded, to thin out dead and weakly branches, or to arrest the growth of unruly or misplaced shoots; but the system which is altogether too prevalent of making an annual visit through the orchard, removing or shortening branches, as a matter of routine, and clipping the tops of shoots without any special object in view, will in a few years assuredly diminish the fruiting capacity of the trees.

The season of pruning is, in some cases, an important factor in the management of trees. Generally any time during the dormant season is chosen for pruning orchards where the object is merely the thinning out of thickly branched trees; the season is not of much importance, and the work can be performed at any time when found convenient. But when the object is to gain additional vigor in certain branches, much will be gained by cutting out the superfluous branches as early as possible after the trees have matured their wood and become deciduous. If pruned at this time the succeeding growths will be stronger than they would be if pruned later. The reason for this is that the tree continues to absorb nutriment by its roots. This nutriment is disseminated to all portions of the structure of the tree, and thus the size and strength of the buds are increased, consequently, if the pruning is delayed till late, part of the nutriment which has been stored in the branches is cut away and the energies of the tree expended unnecessarily. On the other hand, when the pruning is performed early, the buds will be benefited by the accumulated nutriment which otherwise would have

been removed and destroyed, which proves the absolute necessity of pruning in proper season.

PRUNE IN SUMMER FOR FRUIT AND IN WINTER FOR WOOD

Perhaps no advice that has been given in fruit-culture is so vague and disappointing in its practical application as that contained in the short and apparently pithy words quoted above. It is evidently intended as a short, practical rule, capable of general use, producing a certain well-defined result, while in reality it is a mere expedient that may be valuable under some conditions and is always an operation of experiment rather than one of certainty. The principle upon which the advice, "prune in summer for fruit," is based, recognises barrenness in fruit trees as being the result of a predominancy of wood growth, also that any process tending to reduce this redundancy, so long as it does not seriously affect the health of the plant, will favor the production of flowers and fruit. By persisting in the removal of foliage from the tree while it is in active growth its vitality will be weakened and its general health impaired. So that of all the methods employed for improving the fruitfulness of trees this is the least definite or direct, because its usefulness depends upon conditions which cannot always be foreseen or foretold.

In the practical application of summer pruning difficulties and perplexities are encountered which render the operation one of uncertain result. For example, if the growing shoots of an apple or pear tree be checked in their extension by removing a portion of their points, say toward the latter part of June, the lower buds on the shoots will be forced into growth, thus forming numerous side branches which have no immediate connection with fruiting spurs and which will simply tend to the formation of a thicket which will have to be removed in winter. But if the shoots are not checked in their extension till August, and the weather afterwards continues to be warm and dry, the probabilities are that the lower buds on these shoots will start into rather feeble side growth and short spur-like shoots, which will ultimately furnish

fruiting buds. If, on the other hand, the season happens to be wet and mild weather prevails until close on to winter, these same shoots will lengthen into slender twigs, which will not thoroughly mature and will be of no use whatever. The difficulty in reaching successful results lies in the uncertainty as to the proper time to prune, because no two seasons are exactly alike, and also because trees vary in their vigor from year to year. So much then for the advice, "prune in summer for fruit."

Now for that advocating winter pruning for wood. A plant in a healthy growing condition will maintain a proper balance between the root and branches, and any destruction of either will, to a certain extent, destroy this natural balance, so if a portion of the branches of the tree be cut away that increased vigor will be lent to those that remain.

PINCHING AND THUMB-PRUNING OR DISBUDDING

"Pinching" is a term used among horticulturists, and which, although well understood by the craft, has a very indefinite meaning to the general reader. It is a method of summer pruning whereby robust shoots are checked at an early stage of their growth by a pinch at their extremities, between the finger and thumb, without further removal of foliage. This operation retards for a time the extension of such shoots, induces additional growth in other buds and develops shoots where a more active extension is required.

"Disbudding" is the removal of buds or young shoots which have not made more than an inch of growth, and it is certainly the best method of preventing growths where they are not wanted, without interfering with the health of the plant. Pinching and disbudding are the most rational modes of directing the growth of plants. If rigidly practised there would be little use for winter pruning or the removal of branches, large or small, at any time.

Does it not seem to you to be an inconsistent practice to allow a tree to expend its energies in making wood all summer and then go to work with a pruning knife and a saw and cut part of this away, thus sacrificing what it has been

our aim to produce, leaving out the question of injury to the vitality of the tree?

Then again, from an economical standpoint with regard to labor, it is surely easier to rub off a bud in May than to cut off a branch in November. Indeed by proper attention to disbudding the amputation of branches will be rendered unnecessary and the health of the plant will be maintained.

Nothing has been said in the foregoing about so-called pyramidal, vase, or cup-pruning. All these are merely like the cutting of a hedge and a good deal depends on individual taste and local environment. A tree, however, might very well be grown as Nature intended that it should. Root-pruning may be spoken of in a future paper, as this is already too long.

A Dealer's View

Editor *The Fruit Magazine*

Sir: You will remember that in my address to the fruit-growers at our recent convention at Victoria I laid stress on the danger of reciprocity and the placing of fruit and vegetables on the free list. The American-controlled jobbing houses and the Canadian jobbers handling American fruits and vegetables had been working quietly, but effectively, to influence boards of trade of the different towns and cities, and through their country salesmen worked up a sentiment in favor of taking off the duty on fruit and vegetables. It is said the Americans are much more progressive than we are. This is true in this case. While we were contenting ourselves with passing an occasional resolution the Americans, with their string of branch houses in all the important prairie cities, were effectively influencing their customers, boards of trade, etc., in favor of free fruit. What is true of the fruit jobbers is true of other branch American businesses, and our prairie farmers, who are hoping for ten to fifteen cents more for their grain, and fifteen to twenty dollars more for their steers, forget that ten or fifteen cents higher American grain is mainly caused by a bunch of Chicago and Minneapolis speculators and is not an average price. One reason for the Americans taking the duty off grain is to make it harder for these speculators who work a hardship on the consumer without benefiting the producer. When our Alberta farmers have sent a few carloads of range steers into the Chicago market they will get an unpleasant surprise; they will find that the twenty dollars differ-

ence means the stopping of the range steer in a corn state, and the twenty dollars is that corn finish; they will realize that the nearby British Columbia market is preferable to the Chicago one. The prairies may get fruits and vegetables cheaper for a time until British Columbia competition is wiped out; then the jobbers will be in a position to combine and bring in just such quantities of fruit as the market will take at a high price and to their advantage. Anyone familiar with such work knows what a heart-breaking, expensive struggle it is to build up a business in new territory against powerful, established competition; a small firm has but little show; a powerful one generally forces a compromise of some sort, as was the case three years ago with two powerful American companies fighting for our prairie markets. After losing a bunch of money they amalgamated and one withdrew.

Looking back over the last three years the writer could not be induced to go over that struggle again. Some years ago British Columbia fruit was a joke in most of the Saskatchewan markets, not because the fruit was not good, but it had not been properly packed nor in the right condition when packed. Not being able to get anything in the way of a price from the jobbers we had to push it to the trade in the face of determined competition. When we sent a car of fruit to a town another was dumped in, or shipments made into that town at a price to cause us a loss and put us out. We did not look for profits, but to make a market and so compel the sale of British Columbia fruit. This was quite

expensive—displays at fairs, newspaper advertising, dodgers scattered over towns before the arrival of cars, samples sent to church fairs and charitable institutions. This was done looking into the future for returns. We could not see into that future and see that our Government would suddenly put fruit on the free list, to a great extent nullifying this work and expense by giving the Americans the little protection we had and so putting British Columbia fruit from a trifling margin on the credit side to almost certain loss.

If the British Columbia fruit-growing industry was firmly on its feet, growers had no payments to make on their land, orchards bearing with best selling varieties, instead of such a great number of varieties mostly unknown to the trade and so poor sellers, and had they sufficient help at a fair wage, they might then face this free American fruit with a fair chance of holding even. As it is, the Americans can flood our markets through their own distributing houses before we have anything to put on the market; after taking a profit on that while we helplessly look on, they can dump in their surplus while our crop is on. After eliminating our competition they can manipulate our market to their advantage, as stated in the beginning of this article. We, on our part, can no longer pursue an expansive policy. This may sound pessimistic, but a man is not called a pessimist if he insures his buildings against fire, nor should a business man if he insures his business against a Government that changes its fiscal policy without warning and without giving the people a chance to pass on it, upsetting in a few months business that it has cost years of labor to build up. If it was the will of the people, after due consideration, to make such a far-reaching change of such problematical results we would have no complaint to make, but to have such a thing sprung upon us without any consideration, except the calling of our resolutions "the cry of the wolf," we think our complaint is justified. The finish of that story was that the cry was unheeded and finally resulted in disaster.

We assure our many friends in British Columbia that we will do our best, as in

the past, for British Columbia fruit and products, but the prospects are not bright. Apples which are not of the very perishable varieties will hold their own at reduced prices to the growers; peaches, plums, cherries and berries will be hard hit. As these must be marketed in such a limited time and the Americans can fill our markets before our fruits are ready, and we must market ours in competition with their surplus, we can only do our best and hope for a change of Government which will consider Canadian interests first, last and all the time, restoring this slight protection we have.

S. J. FEE,

Manager Vernon Fruit Co., Ltd.
Calgary, Alta., March 9, 1911.

FORGIVEN

By ANNE PAGE

At first I wished to have him know
The wrong he'd done me, that the cruel
blow
Had hurt my sense of justice strong and
fine,
To have him suffer pain akin to mine.
Then I no longer wished to have him
pained:
Although the bitter feeling still remained,
It was not active, virulent and deep,
And could my soul no longer captive
keep.
Then o'er me came a feeling sweet and
strong,
I bore no longer sense of pain or wrong,
But in its place a yearning hope had crept
That he might never know that I had
wept,
That he be spared all knowledge of the
grief
For which my heart so long had sought
relief,
And that his strong young spirit need
ne'er groan
Under the weight of anguish I had
known.
From out my heart all *bitterness* had
passed;
And then I knew that I had learned at last
The lesson hard for which I'd bravely
striven,
And that my loved one was indeed for-
given.

The First Great Canadian Apple Show

(From "Vanity Fair," London, England, November, 1910)

SIMPLY staggering! and impossible to describe without a paint box and a dictionary of superlatives—such was my impression of the first great Canadian apple show just concluded—a show which has been drawing apple-growers by the thousand to Vancouver during the past week. To the average Englishman the show itself is an education—we of the old country have but faint conception of the importance of King Apple in the new. If we could only realise that the Western American and prairie man eats apples with every meal, and that as an article of food with him they rank next after meat and bread, we should cease to wonder where all these apples find a market, and how the supply is by no means equal to the local demand. And your Western American is as particular and knowing as to the varieties of apples he selects for consumption as our English clubmen are over their brands of cigars.

I forgot how many millions of choice apples were on view at the Apple Show buildings in Vancouver last week, but imagine the Queen's Hall, London, stacked with them from floor to roof, and you have some faint idea. The magnificent quality and high average of the exhibits made the ordinary barrel apple outside look sick, and the universal plaint of the English visitor at the show was, "Why can't we get apples in England like that?"

It is, of course, unnecessary to detail the lengthy list of prizes and awards. Suffice to say that the hard-worked body of judges took all the week to finish their task, and they did it with a care and thoroughness that deserves a special word of praise. Size, flavor, condition and the pack of each exhibit were taken into consideration, and the way the "pack" was investigated as to "bulge," "ends," etc.,

was a revelation to those accustomed to our antiquated methods (?) of packing fruit in England.

The show practically resolved itself into a duel between the province of British Columbia and exhibits sent over from the United States from the famed Yakima and Wenatchee districts of Washington and the Hood River district, Oregon—a duel in which British Columbia was victorious after a close fight in the larger or carload exhibits, while the United States pulled up level and divided the honors in the ten-box, five-box and single-box exhibits. A carload, by the way, is 600 boxes, each box containing 40 lbs. of apples.

After a keen struggle Kelowna, in the Okanagan district of British Columbia, emerged victorious in this competition—with its exhibit of Jonathan apples—a great splash of uniform crimson. Personally I prefer the yellow apple, and the 600 boxes of Grimes Golden, which gave a lovely yellow glow to the adjoining hall, claimed my sympathy.

The smaller exhibits—particularly the five-box and single-box classes—interested me most, possibly because they lent themselves more to detailed examination. Here the fruit looked as if it had been moulded in wax and turned out uniform by machinery. A single speck or blemish on that uniformity was sufficient to put a competitor out of the running, and the judges ruthlessly unpacked and emptied box after box when arriving at their decision. In these exhibits was every range of color, from pale straw of the Ortleys and big Gloria Mundi, packed three-tier, to the dusky crimson, almost black, of the King Davids, Arkansas Blacks and Hoovers; the glowing scarlet of the Rome Beauties and the tender flush of the Winter Bananas and Maiden's Blush apple, and the golden glow

of the Grimes Golden made the metallic green of the "Manns" most evident when placed alongside that fruit.

There appeared to be some hundred varieties of apple, and, although I know something about apples, I confess I should be puzzled to detect the difference between some of them, so closely do they resemble each other, particularly the red ones. For instance, no one but a life-long expert could distinguish at a glance between some of the Jonathans, Spitzenbergs and Baldwins if they were mixed together, and I am by no means certain that I could detect the difference between an Arkansas Black and a King David. I occasionally recognised an old and familiar friend among the Ribstones and Blenheim Oranges; but the Cox's Orange, more beautiful in color and twice the size we grow them in England, seemed to be almost a new variety till we came to taste them.

The great show was opened by the Lieutenant-Governor of the Province, and the Prime Minister sang the praises of King Apple, while Vancouver city has done nothing but taste, talk and think apples during the past week.

People in England have but faint conception as to the importance of this apple-growing industry of the far North West—the money there is in it and the opportunities it offers to the intelligent horticulturist from England, who determines to settle as an apple-grower on the "Dry Belt" of British Columbia. I say the dry belt advisedly, because *it is the apple which is grown under irrigation conditions on the dry belt which is distinguished for its keeping qualities.*

This is the one important point—to grow the apple which will keep best in cold storage so that the merchant can put it on the market at his own time. Here at this show I have seen apples that have been kept two years in cold storage and are just as good in flavor, fragrance and appearance as they were the day they were picked from the tree.

Such results are impossible in the case of fruit grown on the wet belt without irrigation, and that is the whole secret of commercial success in apple culture in the North West.

The judges at the Canadian Apple

Show were hard-headed experts, making their awards from the purely commercial standpoint, and it is a significant fact that the dry-belt apple, grown under irrigation conditions, in nearly all cases swept the board.

I am aware of the fact that numbers of Englishmen are now turning their thoughts towards apple culture in British Columbia. I cannot too strongly impress on them the necessity of fruit culture under irrigation, whatever district they select. I am not here to "boost" one district over another; all I say is "grow your apples under irrigation, and avoid those places where you are told you don't require irrigation."

As a rule the average Englishman dislikes what he does not understand, and as he does not understand irrigation culture when he first arrives in British Columbia, he is apt to fix his orchard in some place where he is told he can grow apples without irrigation. Don't. No successful American orchardist ever does; but Englishmen often do, and suffer accordingly.

There is another point I should like to mention to the English consumer—the purchase of apples by the box.

We buy apples by the pound—generally inferior ones and out of a barrel. It is much more economic to buy superior quality and more uniform apples by the box, if we could only get the retailers in England to sell them that way. Some hundreds of people in England have written to me asking how and where they can purchase boxes of British Columbia apples, such as are annually exhibited at the Government Horticultural Show at Westminster. I suggest that an office might be established in London where such orders could be booked and transmitted to a responsible agent in British Columbia, who would select the apples, make up a carload of such orders and forward the consignment in bulk to the London depot for distribution.

I would suggest Mr. DeHart, of Kelowna, B.C., as being a suitable agent for the purpose in British Columbia, though there would be no difficulty in finding plenty of experts willing to act in that capacity in British Columbia, and the sending over of these box orders in

bulk in the manner I have indicated for distribution by a London office would materially lessen the cost to the would-be purchaser of a box. The London office might also usefully act as an information bureau as to the various fruit-growing districts of the British Columbia dry belt, and furnish detailed information to the intending orchardist settler from the Old Country—always provided that it was careful not to “boost” one dry belt district at the expense of another.

I know from experience that there is nothing that appeals so much to the intending orchardist settler from England as the concrete evidence of the apple wealth of the British Columbia dry belt, and I have the utmost confidence in such concrete evidence of the actual box of apples as furnishing the best argument for the intending settler to bring himself and his capital into the dry belt of the Province and set up as an apple-grower there.

The first great Canadian apple show is just over. It is the greatest thing of the kind that has ever been, so the apple-men of the Northwest say. It is to be an annual event, and next year I understand it is to be held at one of the cities in the province of Ontario.

I cannot conclude this notice without

one word as to the indefatigable energy of the manager, Mr. Maxwell Smith, and of his able assistant, Mr. Monroe. Without Mr. Maxwell Smith this show would have been an impossibility. I came six thousand miles to see this great show, and I have lived in it for the best part of a week. I have been behind the scenes and had ample opportunity of seeing the thoroughness of its organization, and I cannot but admire the way in which all details have been foreseen and provided for down to the smallest item, and the good humor, tact and ability displayed by its organiser and his lieutenants under difficult and trying conditions.

I would sum this all up by saying that I found it well worth the journey of six thousand miles to come over to see Mr. Maxwell Smith and the First Great Canadian National Apple Show.

MENTOR.

Note—We appreciate the above flattering reference to the First Canadian National Apple Show by “Mentor,” reproduced from “Vanity Fair,” but can hardly agree that the “dry belt” is the only place to grow high-class, long-keeping apples. There are certain varieties of the apple which do equally well where the natural rainfall is sufficient and not too much.—*Editor.*

Reciprocity

By R. J. DEACHMAN, B.S.A.

RECIPROCITY—horrible thought! Why should we trade with our neighbors, anyway? Why not negotiate a treaty with Teheran or Timbuctoo? It would have this advantage—it would be decidedly useless, and that's a highly desirable feature to the opponents of reciprocity.

Why this opposition to the reciprocity agreement? Why the objection to the extension of our markets? Why these mouthings of pocket patriotism in country papers—sprinkled with tears, interspersed with italics and dashes—fed to the people by the yard and paid for by the protected interests?

After all is said and done this means

to the Canadian people this much at least—a remission of two million dollars of taxes. Are taxes so desirable that we should shed tears at their departure? Will the Empire crumble to dust at the reduction of our customs imposts? Is there anywhere another country on earth where patriotism is peddled for pay and where men of prominence hold hands on hearts, while by tariff fiat they take money from other's pockets?

It means further—access to the American markets for our fruit, fish, wheat, coal, cattle, etc. But the wise men of the east say this: “You are giving away our raw products.” Isn't that serious? Are we? On the contrary, if we close the

American market against ourselves by refusing to negotiate, are we not then giving our raw products away? Let me make this point clearer. On Burrard Inlet at the Hastings Mill a vessel lies loaded with lumber. If the United States market is opened, that lumber can be sold for \$1.00 a thousand more than would otherwise be obtained. That lumber is on the market, anyway. It must be sold. Is he a business man who would sell it elsewhere rather than accept \$1.00 more in the United States? Would that be giving it away? Would it be statesmanship to strive to close that market against ourselves and thus force our products into other less profitable markets?

Honestly, I am convinced of this—the majority of the opponents of reciprocity do not understand the measure—have not read the agreement, and in some vague way imagine that under reciprocity the Americans will take our products and give us nothing in return.

This opening of another door closes no door already open. The Americans will get our products only if they pay more than any other country for them. Reciprocity simply means another opportunity to make the best out of things.

But, say the anti-reciprocity people, if this dire calamity is thrust upon us our trade will go north and south instead of east and west. This is alarming. Our trade with our neighbors to the south now runs into something over \$300,000,000 annually, and quite a large proportion of this, so far as imports are concerned, comes for the use of our manufacturers. The products come in the shape of coal, raw cotton, sugar, iron and steel, which are further manufactured in this country and in many cases are exported in a different form. Is there something criminal about this procedure if done in the case of the farmer, and something highly meritorious about it if in the case of a manufacturer? Does any sane man really think that the C. P. R., for instance, will get so ashamed of itself that it will cut dividends if the tariff is reduced?

Sum up these four facts and tell me how they fit in with the screech of the blue-ruin propagandists, as far as the

ruining of east and west lines of trade is concerned.

1. All the great railroad systems on the North American continent, with one single exception—the Illinois Central,—are built in general upon east and west lines. Of course they have branches running in all directions, but the main trend of their traffic and of the trunk lines is east and west, just the same as the C. P. R. As regards the C. P. R.'s ability to compete with American lines in handling traffic, it is as well fixed in this way as any other road in America.

2. The stock of the C. P. R. is selling for a higher price today than any other railway stock listed on the New York stock exchange. It has made more marked advances than any other railway stock since the conclusion of the reciprocity agreement. Does that look like ruin?

3 The distance from Winnipeg to tide-water at the Atlantic or the St. Lawrence, or to the markets of Liverpool and Glasgow, is shorter by Canadian railway or Canadian water systems by several hundreds of miles than it is by American systems. This should be a factor in favor of the Canadian systems, and under free trade conditions between the two countries should enable the Canadian railways to handle the export products from the American side, instead of leaving the American lines to handle Canadian products.

4 The C. P. R. system and other great railway systems operating in Canada have been built by the bonuses of the people of Canada, so that the overhead charges against these railroads in the shape of interest upon their bonds and stocks should not be so high as in the case of American roads which have been less generously treated by the government of that country.

There is splendid opportunity for conclusive argument so far as injury to our railroads is concerned. If discretion truly be the better part of valor, the railroads of Canada will be discreetly silent on the question of reciprocity, lest by their antagonism they rouse the people of Canada to a realization of other questions that demand settlement in Western Canada as well as the question of freer trade.

But what of Patriotism? Ah, there's the rub. Well, I would simply recall that those who howl now most strenuously and protest most loudly their fondness for anything British, are the lineal descendants of those who, when Britain first adopted free trade, protested that if they did not get some favor, some pap, some pelf from the Motherland, they would lie in the lap of Uncle Sam. No doubt they would go through the same performance today. In fact, from the loyal city of Toronto has come the voice of a certain prominent individual who says that he will fight in the streets rather than that reciprocity should be-

come the law of the land. But there is hope, even for this individual. Men's views are broadening. Under reciprocity—which will broaden our markets, extend our commerce, increase our wealth, and give us a more important position in the world's family of nations—our protesting friends will have more opportunity to work, and after all, to work is as truly the mission of man as to fight, and the opponents of reciprocity will become so strongly attached to the new order of things as they apparently now are to the British preference, against which in its earliest days they protested so vigorously.

The Permanganate of Potash Spray

Editor *The Fruit Magazine*:

Very interesting was Mr. McCallum's letter on permanganate of potash as a spray, in *The Fruit Magazine* for November, page 68. If such an easy substance to handle as permanganate of potash should prove to be effective as a spray it would indeed, as Mr. McCallum says, be a boon to all who grow fruit in a small way.

Doubtless many of your readers, like myself, would be glad of more information on the subject. I am aware that with Mr. McCallum himself this spray is only in the experimental stage; but I should be glad to know in how far he thinks it would replace lime-sulphur as a winter spray: would it kill lichen on trees?

Would there be danger of injury to twigs or buds by using too strong a solution in winter?

Regarding the strength for winter spraying Mr. McCallum says, "a teaspoonful to four gallons of water"; now, teaspoons vary greatly in their capacity, also whether only level full or heaped up. Permanganate of potash is much like gunpowder. The brass measures usually used for re-loading shells would give us the exact number of drams to use to four gallons of water. I find one of my teaspoons heaped up makes about seven drams in a gunpowder measure.

What is probably the strongest solu-

tion that can safely be used as a winter spray?

As a summer spray, "as much as lifts on a ten-cent piece" is about one-third dram in a gunpowder measure.

It will save printer's ink to style this spray the P. P. S.

Can arsenate of lead be added to the weak P. P. S. for summer spray? Would it need this addition to control the summer pests and replace bordeaux?

Perhaps the most interesting part of Mr. McCallum's letter is his statement of the possible improvement in fertility of the soil by treatment with permanganate of potash. Would the same strength of P. P. S. as that used for winter spraying be effective for soil treatment?

If this P. P. S. is as effective as Mr. McCallum seems to think it certainly would be most satisfactory to think that when we were drenching our trees we were increasing the fertility of the soil.

The effectiveness of this spray might very well form a subject for test at the experimental farm.

Whether as a disinfectant in Condyl's fluid, or as a fairly good stain for wood floors, or an antidote to some vegetable poisoning in cattle, thanks to Mr. McCallum's experiments and his kindness in giving them to the public, our old friend permanganate of potash may have a wider range of usefulness than ever.

Comox, B. C.

C. J. B. WARD

Editorial

CANADIAN FRUIT-GROWERS, ATTENTION!

GREAT national and international movements usually disturb existing conditions more or less, but usually with some beneficial results.

While the ratification of the proposed reciprocity agreement between the United States and Canada may cause the fruit-growers on both sides of the line to re-adjust themselves and their methods to some extent, the result should not be without compensating advantages, and the Canadian fruitmen should rise to the occasion and organize in such a manner as to retain a full share of the control of markets on the American continent. This question should not be viewed from any political party or industrial or commercial class standpoint, but from a broad national aspect, having in mind the welfare of the whole people.

Canada has the soil, climate and the men to produce as high-grade fruit (of the varieties suitable to northern latitudes) as any country, and should invade the United States markets at every vulnerable point.

To say that the young orchards of British Columbia cannot compete with the older plantations of Oregon and Washington is about as reasonable as to say that British Columbia cannot compete with the old orchards of Ontario, Quebec and the Maritime provinces. Prices are not likely to be reduced, but a higher standard of fruit and more careful grading and packing will be required, which are much needed. The Dominion and Provincial Fruit Inspection Acts should also be more rigidly enforced. The prairie market would then be regulated by the standards of fruit offered for sale, because the United States fruit-grower is not going to sell his fruit in Canada for less than he can get at home, and the high-class fruit brings fully as good a price south of the line as north, as the following examples will show:

From a five-acre tract O. W. Rich, of Kenwick, Wash., sold in 1910, 100 crates of strawberries for \$250; 100 crates of cherries for \$200; 500 boxes of peaches for \$250; 200 boxes of Bartlett pears for \$300; 600 boxes of Tokay grapes for \$300; apples, apricots, prunes, etc., \$100; garden truck, \$100; total, \$1,500; of which \$500 was paid out in expenses, leaving a net profit of \$1,000.

In 1908 from 200 ten-year-old winter apple trees on two acres of land S. E. Marical, of Entiat, Wash., sold 1800 boxes for \$1.25 a box. His expense was \$450, leaving a net profit of \$1,800.

In 1909 J. H. Blake, of Wenatchee, Wash., sold from 96 ten-year-old trees on one acre 960 boxes of Winesap apples for an average price of \$2.40 per box. His estimated expense was \$600, and his net profit \$1,700.

Blackman Bros., of the same place and in the same year, from 2,880 eight-year-old trees, covering 36 acres, sold 18,000 boxes of apples at an average price of \$1.52 per box. Their expense amounted to \$6,000, leaving their net profit \$21,500.

The cost of fruit labor in both countries is very much the same, although Oregon is about 15 per cent. lower than in British Columbia.

Opponents of the proposed reciprocity agreement seem to be wonderfully exercised over the probable effect upon our transcontinental railways running east and west. But so long as Montreal is so much nearer Liverpool than New York, Canadian routes will always have the preference. Even with the tariff wall there was more wheat shipped from Montreal last year than from any other Atlantic port, and since the reciprocity negotiations have been in progress the C. P. R. stocks have advanced from 208 to 216½. There is as much sense in this cry as there was in the fear that the building of the G. T. P. and C. N. Railways would cripple the C. P. R., and that the rise of Prince Rupert would kill the

growth and prosperity of Vancouver. The annexation cry is hardly worth mentioning again because of its absurdity, but we venture the assertion that there are more people in the territory of Alaska alone who want to become annexed to Canada than there are in the whole Dominion who would be willing to be annexed to the United States.

And how can these imperial federalists, whose loyalty is an ignoble selfishness, ever expect to bind an empire together with the treacherous cords of artificial trade arrangements by forcing the Mother-country to tax her people against all the rest of the world for our benefit, when we remember that Canada stands eighth in the list of Great Britain's trade customers? and as the United States is her best customer, surely we should be justified in reaching out for some of that trade which the Mother-country finds so profitable. Great Britain buys annually from the United States \$600,000,000 and sells her \$300,000,000; she buys from Germany \$300,000,000 and sells her \$250,000,000; from France she buys \$225,000,000 and sells her \$160,000,000; she buys from Russia \$200,000,000 and sells her \$100,000,000; from Argentina \$165,000,000, and sells her \$100,000,000; from India \$200,000,000 and sells her \$225,000,000; from Australia \$165,000,000 and sells her \$140,000,000; from Canada she buys \$130,000,000, and Canada buys from the United Kingdom \$95,000,000. Great Britain's total imports of fruit is about \$60,000,000 annually, of which Canada supplies \$4,000,000.

Notwithstanding tariff walls Canada sells to the United States about \$111,000,000 annually, and buys from the United States about \$250,000,000, against \$95,000,000 from Great Britain.

We believe in strengthening the ties that bind Canada to the Motherland, but not the brand of imperial federation whose strength is measured and limited by commercial advantages. True loyalty is not bought and sold for dollars and cents.

The ideals for which we should strive are the highest national development of the Dominion of Canada, the fraternal

unity of the British Empire, and the peace of the world.

It seems a pity that a subject fraught with such tremendous possibilities for the promotion of peace and the advancement of civilization in the western hemisphere should be brought into the sphere of party politics.

The ratification of the reciprocity agreement will not mean knocking the bottom out of Canadian nationhood, but that the sun has set on the day of high tariff walls between modern civilized nations, and that the streams of commerce will gradually find their level through the courses of least resistance.

The reciprocity agreement places the Canadian statesmen who negotiated it in the front rank of international diplomats, and proves that the day has gone by when Canadian interests must be sacrificed in order to curry favor with the United States or anybody else.

LAND AND LIME

HOW can a farmer know whether his land requires to be limed? He can make a rough test in the following way: Put a sample of the soil of a field on a plate, make it into a powder, and then pour a little hydrochloric acid (obtainable from any chemist) upon it. If the soil effervesces freely, that is an indication that the soil is not poor in lime; if, on the other hand, there is a little or no effervescence, it is a sign that there is a deficiency of lime.

BACK TO THE LAND

In a recent address to the Royal Society, Lord Robson declared that men of science have unconsciously attacked the problem of overcrowding in cities by rendering it possible and profitable for factories to be established away from great towns. This results from improvements in the transmission of electric power whereby the factories may have the precise amount of power they want sent down to them every morning by wire at a trivial cost. The result will be, he thought, that "some day manufacturers will begin to go back to the land, and we shall regard engine-building or soap-boiling as rural occupations."

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

OPPPOSITION within and without notwithstanding, the government is holding fast to its reciprocity policy. Ministers and honorable members on the ministerial side who support the reciprocity resolutions show no sign of weakening, but over and over again at every stage of the proceedings in parliament have declared that the reciprocity agreement shall be put through here in any case, ratification or no ratification on the part of the United States—no matter what is done at Washington. Ratification does not bind either side until both countries have adopted the agreement as it stands. The clause providing for this may be usefully recalled in this connection. It is as follows: "Such legislation on the part of the United States may contain a provision that it shall not come into operation until the United States Government is assured that corresponding legislation has been, or will be, passed by the Parliament of Canada, and, in like manner, the legislation on the part of Canada may contain a provision that it shall not come into operation until the Government of Canada is assured that corresponding legislation has been passed by the Congress of the United States."

Readers of *The Fruit Magazine* may have noticed a telegram from Washington mentioning with an appearance of authority that President Taft was expected to propose to Sir Wilfrid Laurier a postponement, on both sides, of further attempts to put through the reciprocity agreement until next December. In the event of any such suggestion being made, it is said here that Sir Wilfrid's only possible reply would be that the resolutions were before the Dominion Parliament and could not be withdrawn, the intention of the government being to let them go on the record of proceedings as a new "standing offer" that the United States may accept, or reject, or propose to modify, as Congress shall decide.

One of the difficulties the government has to contend with is to satisfy representatives of leading Canadian interests who appear, some for and some against reciprocity, one set coming to the administration for relief from tariff duties and another set in the very self-same industries opposing action in that direction. Sir Wilfrid referred to the fact in a speech quoted in my last letter to *The Fruit Magazine*, and new complications in this connection are constantly arising, not only in Canada, but in the United States. We find recognized organs and representatives of agricultural, manufacturing and other great United States industries continually taking opposite sides in the same camp.

As the campaign develops it is also seen that while some particular industry in the United States is claimed to be hostile to reciprocity—will severely suffer from reciprocity—people engaged in the same industry in Canada are equally opposed to it. Mr. Elijah Rodgers, of Milford, Connecticut, president of the State Pomological Society, addressing the members of the Niagara, Ontario Peninsula, Fruit-growers' Association, complimented the Canadian association on their opposition to reciprocity, and assured them that, on his own side of the line, the Connecticut State Pomological Society had carried a strong resolution against the agreement entered into by the governments of the United States and the Dominion. Mr. Stancliffe Hale, of South Glastonbury, Connecticut, spoke to a like effect, adding, however, that opposition was dictated, not so much by fear for the local fruit interests south of the line, as for the farmer in the United States, who was placed at a great disadvantage, and did not receive enough in return for what was given.

Opposition members have made a great point in the reciprocity discussions in the House of urging the policy of referring the whole question to the country at large,

but there is not the slightest chance of anything of the sort being allowed to block the passage of the reciprocity resolutions. In the event of the present agreement failing of ratification at Washington, the probabilities are now said to favor renewed reciprocity negotiations, so far as the Dominion is concerned, being deferred until the next general election has taken place in Canada. Should a Liberal government be then returned again to power at Ottawa it would be a mandate to negotiate for a new reciprocity agreement, and a commission might then very well be appointed to visit all parts of the country, take evidence and report.

"What will be the most noticeable result of the reciprocity agreement, as regards fruit, if the agreement were to be ratified by both countries?" I enquired, for the purpose of this letter, of a leading fruit-dealer here. The answer came unhesitatingly: "Fruit and early vegetables would be cheaper, of course. A great deal of American fruit would be dumped in Canada. It would mean the loss of thousands of dollars all over the Dominion."

"Wouldn't it benefit the consumer?" "In the way of lower prices for the time, yes."

"Wouldn't it benefit the dealer by increasing his trade, employing more help, turning over more stock and money, and so on?" "The dealer would turn over more money, but the percentage of profits on his trade would be reduced. It might break up some. Growers in a good many places would suffer."

"What part of Canada would feel the worst effects, think you?" "It would be felt all along the frontier. From the accounts printed by the British Columbia papers it seems that part of the country might be badly hit. While, on the one hand, British Columbia does not produce enough yet to satisfy the demand, on the other, a few years hence the province will be producing enormously and free entry from the neighboring states might hurt her growers and all connected with the trade rather seriously. Prices for her products would go down. They can produce fruit cheaper at present in some parts of the

States, though much of it is very inferior to the British Columbia products. The dumping of cheaper inferior fruit from the States would be felt all along the frontier. The effects of free entry might be more severely shown perhaps in early vegetables—early cucumbers and a lot of other things—than in fruit. Thirty per cent. off is quite a difference and will let in a lot of stuff to the damage of our own growers. In apples, if they are overstocked over there (in the United States) and the English market is well supplied and drops, they would send in here and prices would come down, and both growers and dealers would lose. People would lose money put in stock."

"What would you suggest?" "I for one would like to see at least a compromise on vegetables, if not on fruit—the duty being collected in the summer and allowed to stand, as in the reciprocity agreement, for the winter."

Speaking of the supply of fruit in the United States generally, Stancliffe Hale, the well-known Connecticut fruit-grower already referred to, said at the recent Niagara fruit-growers' convention that the market south of the line is not over-supplied, except in some parts, at the height of the season. At that period there is always congestion for a time, especially in the larger cities, and conditions are more or less difficult to deal with. It would seem that none of the great commission houses in the States has so far been able to devise a system of distribution fit to cope satisfactorily with these periodical visitations of congestion in leading markets. The crisis nearly always comes suddenly, finds everyone unprepared, and leaves loss and dissatisfaction behind. The supply momentarily exceeds the demand at current rates, and tens and scores of thousands of dollars' worth of fruit food perish before sellers at last make up their mind to let the fruit go for anything it will fetch. There were several occasions of that character in pretty nearly every large city in the Northern States and Canada last season. Dealers here in the capital can speak of them from unpleasant experience. I had a talk on the subject with one of our

largest dealers. "But after all," he wound up by saying, "taking the good with the bad, results on the whole were not much less satisfactory than usual. That means, of course, the losses in the congested periods were more than made up later on by high prices for the rest of the year."

Orchards in the Niagara peninsula have come through the winter without damage. The trees are healthy and loaded with buds, plums showing perhaps best of all—much more promising than last year. The danger season in the peninsula, however, as well as in nearly all the central parts of Canada, is not so much from the severity of the winter's frosts as from later severe climatic conditions when the blossoms are opening. The indications so far, as compared with last year, are decidedly for better results in the orchards.

A bulletin from the office of the Dairy and Cold Storage Commissioner has been issued in response to enquiries as to tomatoes for Great Britain. It shows that, after paying all charges, a shipment of tomatoes from Ontario to London at the prices obtained for continental tomatoes would leave just 5 cents a case of 25 lbs, f.o.b. packing house—a sum not sufficient to pay for the packing box and packing.

Reports from the Trade Commissioner at Manchester, Eng., contain a paragraph relating to the first arrival of Russian eating apples in bushel barrels at Covent Garden. The condition of the fruit was described as "splendid," but in consequence of the plentiful supplies of apples from other sources the price realised, as a barrel of slightly over one bushel, was considered unsatisfactory.

Arrivals of apples had been much larger than expected, largely due to the quantity of California box fruit, 68,521 boxes against 27,458 boxes during the corresponding period last year. The demand throughout had been active, and through the firmness of holders of Californias the decline was gradual and not as much as might have been if the fruit had been forced on the market, and closing prices only showed a small de-

cline in fourteen days of 3d to 6d per box, which was accepted rather than put them in store.

Arrivals of barrels, which were mostly Maine, had generally shown signs of frost, which caused a gradual decline on the previous high range of prices, and although some really good fruit was offered, buyers were suspicious and quotations were at a decline of fully 2s to 3s per barrel. With the expected small shipments, however, the situation was good, the probabilities being quite an advance on the then quotations, which were:

Canadian Baldwins—Firsts, 21s to 24s 6d; seconds and slacks, 22s to 24s.

Canadian Russets—Firsts, 26s to 30s; seconds and slacks, 22s to 25s.

Canadian Davis—Firsts, 19s to 22s 6d; seconds and slacks, 17s to 19s.

Canadian Spy—Firsts, 18s to 24s; seconds and slacks, 16s to 18s 6d.

Nova Scotia Baldwins—Firsts, 18s to 21s 6d; seconds and slacks, 15s to 18s 6d.

The Department of Trade and Commerce has received the following report from Trade Commissioner J. M. Mussen, Leeds, England: "Owing to the shortage in the supply available for export the trade done in this district in Canadian apples during the season now closing has been below the average of former years. It is estimated that only about one quarter of the usual supply has been sent to this district, but at the same time it is pleasing to report that the shipments that have come forward have given general satisfaction, both in regard to the quality and packing. A noticeable feature of the season's trade has been the increasing use of bushel boxes in place of barrels. This system of packing appears to be meeting with more favor among the merchants and dealers in this district.

"The advent of supplies of apples from Ireland to this market is being followed with close interest. This season the business done has been larger than last year when the trade was initiated, and it is contended by those interested that in a few years Ireland will be able to offer liberal quantities for shipment to the English market.



PROVINCIAL GOVERNMENT POWER-SPRAYING DEMONSTRATION AT
HAMMOND, B. C.

Power Spraying

By STILLMAN M. MOULTON, Vancouver, B.C.

WITH the advancement of the fruit-growing industry in the province and the impending reciprocity agreement it behooves every practical fruit-grower to place himself on a fighting basis for a share in the control of the commercial fruit market of this country and the neighboring states.

We gain that control by the production of our goods at a minimum cost with the maximum amount of efficiency—that is, quality and quantity of articles produced.

Just as cultivation, pruning, irrigation and fertilization are some of the branches of the fruit trade on which is hinged success, so is spraying one of the branches which will take consideration in our commercial success.

As all successful business is run on a foundation and system, so must the successful fruit-grower run his business on the same lines, and with the setting of the trees in the ground begins the survival of the fittest. Shall the tree survive the elements, insect pests and fungus diseases or not? That is for the producer to answer.

High pressure is the most essential re-

quirement for spraying, as it makes thoroughness possible.

Sometime while watering your lawn you have turned a coarse stream out into the dusty street. The large drops united, formed channels and ran off, leaving much of the dust untouched. Then you reversed the nozzle to a finer spray, and immediately the ground became coated with a thin layer of moisture. Herein lies the principle of pressure. For the distribution of spray solutions into myriads of fine globules suitable for good spraying requires a steady pressure of from 120 to 200 pounds. Throw your spray below a 120-pound pressure and watch your results. At 80 pounds it is impossible to break the small globules of spray fine enough so that they will unite and coat, and not form small streams and collect in large drops on the leaves, branches and fruit. These drops are the concentration points of the chemicals in solution, and much damage has been done to fruit and foliage by the chemical action of such points mentioned. This has been particularly noticeable in the summer applications of bordeaux, causing the russetting effect on the fruit.

Spraying is classed as hand and power. For the small and dependent commercial fruit-grower, who has from five acres or less to ten acres of young orchard, the best hand pumps may serve the purpose for the first two or three years. After that the question may arise: Is he getting the results required to place him in the front ranks of commercial competition? With the best styles of hand pumps on the market it is almost impossible for the average working-man to keep a hand pump with two leads of hose at a 100-pound pressure for more than an hour at a time. Therefore, when the grower begins to produce fruit it is high time to look for the best method of the application of his spray, and this may be found in the power sprayer.

The gas engine seems to be the present boon to the fruit-grower, and it is with this he gets an abundance of steady power to produce the pressure and emulsify the spray solutions, and the emulsifying of spray solutions in itself is a most important factor for good results.

It is now openly recognized that a power sprayer will do from three to five times as much work as the best hand pump and at one-third the cost. There are several makes of power sprayers on the market today, which can be bought for \$300 to \$500 complete, including running gear. The larger machines, 2

to 2½ h.p., are made to run four leads of hose at 200 pounds pressure and carry 200-gallon supply tanks. The smaller ones, 1½ h.p., run two leads of hose at 200 pounds pressure and carry supply tanks of 150-gallon capacity. For large trees four leads of hose can be used to best advantage; on medium to fair-sized trees two leads of hose are preferable. Rapidity in transportation of spray solutions from stock into the spray tank lessens cost of operations, and thus much time may be saved by having your power outfit equipped with a good intake pump, of either the rotary or piston type. The piston pump gives best results for long lifts. In the Gordon Head district of Victoria, in the summer of 1910, a 28-ft. suction hose was attached to a piston pump on the power outfit in use, and it was possible to drive alongside of wells and fill the spray tank of 200-gallon capacity in six minutes on a 25-ft. lift. If the fruit-grower has an abundant supply of water, which he can draw on from above, he might arrange a platform above his spray tank and prepare his solutions thereon, and run them from his supply barrels into the spray tank, thus doing away with the intake pump. On the other hand, the labor of raising hot water and chemicals to this platform for mixing purposes is also to be considered. Therefore, if your



MIXING AND STRAINING THE LIME-SULPHUR SOLUTION



POWER SPRAY REACHES THE TOP

machine is equipped with an intake pump and you have no tap to draw water from but a surface well, you can pump enough water by hand to make your stock solutions, and then draw both from the well and the stock solutions with the intake pump. If a tap is at hand you can fill the barrels with water and stock solution, and then draw from both. This works very well in the use of the prepared lime-sulphur spray. Five 50-gallon barrels are placed alongside. In the first one are slaked 40 pounds of lime. This lime is strained into the second barrel, and to it are added 20 gallons of prepared lime-sulphur solution. The barrel is then completely filled with water, as also are the remaining three. The power sprayer draws alongside and the four barrels are emptied by the intake pump, and the driver is ready to proceed into the orchard for work.

Before a man takes hold of a spray rod in the field let him be prepared. Almost all the sprays, with the exception of the oil emulsions, are disagreeable to work with. A thin coating of vaseline on the hands and face is a good protection against all caustic sprays. See that the gloves are well greased. If they become saturated insist on dry ones being replaced at once. Equip each man with a good pair of pliers—most necessary article in repairing hose, removing nozzle caps and cut-offs. See that each rodman

looks after his hose, keeps it washed out at night and always repaired. If the weather is frosty be sure there is no water left in the pump valves or pipes. Broken castings are not always easily replaced, and time is often valuable.

As for the application of the spray itself the quality of work depends on the man behind the rod, and perfect efficiency can only be reached by concentration of mind and study with practice.

COURAGE

“When you get into a tight place and everything goes against you until it seems you cannot hold on a minute longer—never give up then, for that is just the place and time that the tide will turn.”—*Harriet B. Stowe.*

SUN SPOTS

“Don’t look for the flaws as you go through life,
And even if you should find them,
It is wise and kind to be sometimes blind,
And to look for the virtues behind them,

For the darkest night has a ray of light
Somewhere in the shadows hiding,
It is better by far to look for a star,
Than the spots on the sun abiding.”

The Size of An Acre

By PROF. L. H. BAILEY, of the Cornell College of Agriculture, in the "Youth's Companion"

I AM convinced that the size of an acre of land varies directly with the size of the man who manages it. The larger the man, the larger the acre.

I do not know that it matters very much whether the man lives west or east or north or south—what he puts into the land in the way of intelligence and energy he will get out of it in crops and live stock.

In a new country and under other favorable conditions, an indifferent man may reap much more than he sows; but when the first easy and simple conditions are past, this man is likely to find his land reducing itself to his own size, and the acre dwindles to a half-acre or a quarter-acre; and the cases are not rare in which the size has shrunk so much that the man has thrown the acre away as of no further value. A man is not a good farmer until his acre grows larger every year.

I do not mean that a little farm is always to be advised, and I do not ask any person to live on one acre of land; but whether the farm is of one acre or one thousand, the productiveness of it and the satisfaction of the farm life should increase continuously, and I therefore use the acre as the text of my appeal.

A man does not expect that his business as a storekeeper or his profession as a lawyer will be stationary after he has once entered on it, and no more need the business of a farmer be stationary. If he arrives at the limit of increase with his piece of land, he may buy more land, in order that his energy may find useful expression; or he may add to his farming business any one of a dozen rural mercantile pursuits, as the buying and selling of farm implements, of apples, of hay, of eggs and poultry, or of general farm supplies; or he may serve himself and his community by associating in some co-operative affair in the neighborhood, as in a creamery, farmers' grain-elevator, or

fruit-packing association; or he may give his superfluous strength and enterprise to the church or the school, the village library, or other worthy undertakings; but always he makes his acre the unit and the base of his operations, even if in the end he spreads his influence over the entire neighborhood.

It is not at all strange that people left home and comforts to go into the wide and homeless west. By nature all men yearn to live their own lives and to be free. As soon as the lines of civilization become set and hard, as placards of "no hunting" or "no trespassing" and "no fishing" are put up against every piece of wood and of wild land, when "keep off" signs are on every interesting space of sward, when high walls are built about the estates, then the spirit begins to rebel, the man chafes, and if he can find the way to do it, he escapes. He appropriates the naked earth in order that he may have a free hand.

As I write these words, I see little cabins placed far out in the pitiless sagebrush deserts, the occupants of them foregoing shade and water and parents and church and roads and school, only that they may be free. It is the spirit that brought the Pilgrims to the cold North American continent, that settled the wilderness beyond the Hudson, that severed the bonds with England, that charted the great Northwest Territory from which noble states have been made, that sent Lewis and Clark and Whitman and Fremont and hundreds of hardy explorers into the vast expanses of the region beyond the Mississippi.

All regions and realms have been conquered by those who have left the roof-tree. One person may have gone for gain, one to establish a home, one to await the development of the country, one to found a mission and a church and a school, another to find the country that lies beyond; but at the bottom this



TWO OF BRITISH COLUMBIA'S BEST
"NATURAL PRODUCTS"

onward migration expresses the unrest of the soul under any form of civilization that sets bounds to human action or draws a curtain across the imagination. Men will always see visions, and no power can hinder them.

The opportunities have been unbounded in the wonderful west for those who have courage and who foresee the future; and these opportunities are probably not less today than they were in years gone by. The very democracy of the pioneer cabin and the "prove-up" shack, that levels accidental distinctions between men, allows the latent qualities to develop. The lure of the new opportunities takes men on, and away from their limitations.

Against this compelling opportunity of the west, all the old states must set forth the opportunities that lie also in their acres, and put before the imagination of the young people the undeveloped agricultural resources of the eastern regions, for these states must have a thrifty rural population if they are to develop the best kinds of institutions. In the end there will be much less unproductive or waste land in the thirteen first states than in those of the Rocky Mountains and the western coast. The agricultural west is better known to persons born in the east than is the agricultural east to persons born in the west.

Out of the multitudes who have gone into the abounding west, many have found the rainbow and have builded at its end. Many, also, have found it not, and have had no power and no volition to make a farther journey. So the vast west has been settled by good folk and indifferent, by the far-seeing, the adventurous, but always by the courageous. We hear the reports of all those who have found the pot of gold, but no word of those who saw the rainbow only when they left the old home.

I have seen the bow of promise all over and across the continent; and I am sure that the pot of treasure is at its end, whether in the abundant cotton lands of the south, the sweeping prairies of the regions beyond the middle longitudes, or in the homeful lands of New England. I have seen men digging for this treasure under burning skies, on sweeping sand-plains of the deserts, and in the quiet

reaches along far northeastern streams; and whenever the acre of land was big, they have found the pot of gold.

I once asked an old gardener how much land he had, and he said with pride that he owned one acre; and he added, "It is a wonderful acre; it reaches to the center of the earth in one direction, and it takes in the stars in the other." This man's farm included not only the pot of gold at the end of the rainbow, but it contained the entire rainbow.

I would not send one person to the land who does not by instinct belong there, but I would drop a suggestion into the minds of those who have reason to think that they would make cultivators of the land.

Our civilization oscillates between two poles. One pole is the syndicated and corporate interests. The other pole is the laboring class. By nature both classes tend to be lawless, one class by having laws made in its own interest, the other by taking the law into its own hands. Heroic efforts are being made to bring these poles of experience together and to weld them into one harmony.

Between these two stands the great land-owning and land-working class, steady, conservative, abiding by the laws as they are made, and constituting the sustaining force or balance wheel of society and of all the confident nations. These men and women on the land are needed in every part of our country, as well in one geographical region as in another.

A good part of our people should establish their families on the land; for city properties come and go, and stocks pass on and away, but on the land one may found a dynasty. Some persons will prefer to found their dynasties under one sky and some under another. Speaking broadly, one great region is not better than another. But a dynasty is founded only when the family settles and abides, and not when it moves forever onward.

Men pay one thousand dollars and more an acre for land in some parts of the irrigated west. These are very large acres, for the man dreams about them. And this is why the acres are so very large—because they attract the type of mind that will give one thousand dollars

for them. But if one were to put one hundred dollars of his thousand into an acre in the older regions, and then put the remaining nine hundred dollars into the same acre, his results would probably be as great in one case as in the other.

The east needs to feel the kind of courage that drives the hopeful west, to know the money value of visions and to learn how to cash them in. Not all the good and forceful folk have left any region, and none of the lands in North America are worn out; but there are some regions that need a quickening of the spirit as to the size and importance of an acre of land.

The next fifty years will probably see more advancement in the agricultural thought and practice of the world than has taken place in the previous history of mankind. I find many young men in all parts of the country going out on the land to till the earth in a new way and to put new ideals into rural civilization.

Those who are well prepared, who lay out a wise course of action, and who stand by the business persistently, will be sure not only to win, but to contribute much to the needed redirection of country life.

All life on the land should provide something of the independence and freedom that all strong men crave. As a region matures, the unrestraint necessarily diminishes; but the man can still secure freedom by making the most of his acre and by knowing all the nature about him, for a man must be a good naturalist if he is to have the information and the resources that a farmer needs. A man's freedom lies largely in his way of thinking.

I do not know how large an acre of land may be, but I know that it may raise a wholesome product to help feed and clothe a needful man, and that it may yield industry and self-dependence and unyielding faith to sustain a needful people.



VIEW IN QUEEN'S PARK, NEW WESTMINSTER, B. C.

Land Values

THE value of fruit lands depends upon the annual revenue therefrom—upon the amount of money they will make for you. Agreeable climate, convenient transportation, and pleasant social conditions have a secondary influence upon value.

On the Pacific slope fruit-growers have demonstrated beyond all doubt the remarkable revenue-producing value of fruit land. The records are astounding—they would be hard to believe if they were not backed up by the most trustworthy evidence.

The records of fruit-growers in the West Kootenay district, British Columbia, are excellent. The returns received by the growers are the more remarkable because the orchards are just coming into bearing. From one tree, this last season, Mr. J. T. Bealby, near Nelson, took \$75 worth of cherries; from one-third of an acre he took \$500 worth of the fruit. This return is at the rate of more than \$1,500 per acre.

The yields are not likely to average as high as this over any considerable area, but if this be reduced by half, the return per acre is \$750, a very medium revenue for Kootenay cherries. Labor and other expenses being estimated at \$250 per acre, there is left a net profit of \$500, sufficient to pay a 100 per cent. dividend on land costing \$500 per acre, or a 10 per cent. dividend on land costing \$5,000 an acre. Is there any business requiring equal capital that pays better?

Mr. James Johnstone, another West Kootenay fruit-grower, made a net profit of upward of \$500 per acre from a seven-year-old apple orchard. Here is the same generous profit, equal to 10 per cent. dividends on a land valuation of \$5,000 per acre. Mr. Johnstone's experience with cherries is also interesting, for his gross return per acre is about \$1,050—rather more than our estimate in the preceding paragraph.

Mr. John Hyslop obtains \$900 per acre from apples grown on twelve-year-

old trees, and from raspberries he has realized \$900 per acre. The value of properties that will produce such yields as this, if estimated on the basis of a 10 per cent. annual return on the investment, would be several thousands of dollars per acre.

As a matter of fact, well-developed orchards near Nelson are valued, and some have changed hands, at the rate of \$1,000 per acre. During 1910 land at Renata sold at \$500 to \$600 per acre. In view of the prices paid for improved land south of the international boundary there can be no question but that good Kootenay orchards will cost several thousand dollars per acre in a few years when the business is more fully developed.

From the outset the land can be made to yield a revenue. It has a high value for what it will produce immediately. Messrs. Mawdsley & Eskrigge, of Kaslo, report a yield of \$320 per acre from potatoes and apples grown together in a young orchard—over 100 per cent. return on a land valuation of \$300 per acre.

Axel Johnson, in Fire Valley, grows eight tons of potatoes per acre in conjunction with his fruit. For the potatoes \$20 to \$60 per ton is paid, an average of say \$30, making \$240 the value of the potato yield alone, to say nothing of the fruit. This would give a return of over 100 per cent. on land valued at \$200 per acre; or 10 per cent. on land valued at \$2,000 per acre.

F. G. Fauquier, of the Needles, opposite Fire Valley, has a young orchard just coming into bearing. A single five-year-old Spy tree has yielded five boxes of apples—a matter of note when we remember how late the Spy comes into bearing in the East. Mr. Fauquier nets about \$600 per acre from strawberries, which are grown between his trees. He likewise nets upward of \$600 per acre from raspberries.

Consider the value of such land as this



OFFICERS WHO CONDUCTED THE TRANSFER OF THE ESQUIMALT NAVAL STATION
FROM GREAT BRITAIN TO CANADA

Reading left to right—Rear-Admiral Kingsmill; Commander Vivian, of H.M.S. Shearwater; Commanden Stewart, of H.M.C.S. Rainbow; Mr. F. S. Desbarats, Deputy Minister of the Naval Service of Canada; Mr. G. W. Phillips, Naval Storekeeper; and Commander Roper, Canadian Chief of Staff.

—money returns that give a 100 per cent. dividend on land valued at \$600 per acre, and 10 per cent. dividend on land valued at \$6,000 per acre.

A few people who fail to think the matter out carefully and logically are prone to conclude that good fruit land at the price is an expensive luxury and not a business proposition. Nothing could be farther from the truth. The examples we have noticed very clearly indicate this. In fact, for the amount of capital invested, there is no business that will yield such enormous profits as fruit-growing in a suitable district. Only a comparatively small amount of capital is required, and the investment will produce returns almost immediately.

The cost price of such land as we have

been discussing is certainly determined in the long run by what it will produce. Farm or fruit land in Eastern Canada or in the Eastern or Central States will give a net annual return of about 10 per cent. on a valuation of \$100 per acre. Accordingly, \$100 to \$200 per acre is the price of the land when it is bought or sold. If the price of land in the East is determined by what it will produce, will not the price of land on the Pacific slope also be so determined?

The reason that West Kootenay fruit land does not today cost more per acre is because the country is new, population is sparse and there are not yet enough people to make use of all the land.

Wild lands in California, in Oregon, and in Washington, where population is

thicker, have jumped from almost nothing to thousands of dollars per acre, as they proved their capacity to produce fruit and as settlers came in large numbers. In irrigation districts in Washington wild land today costs \$400 to \$500 per acre, with additional annual expense for water privileges. In the Puyallup Valley, Washington, five acres of land, set out with various kinds of berries, last year sold for \$8,000.

Prices of \$2,000, \$2,500 and \$3,000 per acre are quite common for orchard land in the Wenatchee and the Yakima Valleys in Washington. When we see these values mounting up under our own eyes, just south of the international boundary, it is not difficult to foresee equal values in the near future just north of this invisible line.

The rainfall in the West Kootenay averages 27.91 inches. The heaviest monthly rainfall is in June, when of most value to the fruit crop.

Government meteorological statistics show that for a period of three years the highest temperature recorded was 94 degrees Fahr. and the lowest 6 degrees below zero. These were respectively for the months of July and February, but the average temperature for these months for the period dealt with are—for the month of July 69.03 degrees Fahr., and for the month of February 29.39 degrees Fahr. The principal cause of this mildness of climate is the soft wind from the Pacific Ocean commonly called the "Chinook," which finds its way along the valley of the Columbia River.

Destructive Insect and Pest Act

AND REGULATIONS GOVERNING THE IMPORTATION OF NURSERY STOCK INTO CANADA

By C. GORDON HEWITT, Dominion Entomologist, Ottawa

THE following are the amended regulations established by Order in Council on February 27, 1911, in virtue of the provisions of section 3 of the Destructive Insect and Pest Act (chap. 31, 9-10, Edward VII). All previous regulations under the Act are rescinded.

It is important and essential that all persons importing nursery stock, under which are included trees, shrubs, plants, etc., into Canada, should study the regulations carefully to avoid any trouble which might otherwise arise through ignorance of these regulations in respect of importations of trees, shrubs or plants which they may be making. For their information, therefore, I will briefly indicate the main facts which are to be observed when importing stock. These are included under sections 3, 4, 5 and 6.

The stock specified under sub-section

(a) to (e) of section 3 is exempt from the provisions of the Act. Such stock may be imported at any time of the year and through any port, and no notice of the ordering or the receipt of such stock is required. Greenhouse-grown plants must be accompanied by a certificate to that effect.

Notice must be sent to the Dominion Entomologist in accordance with section 3, when an order for nursery stock is sent, giving the *nature*, *quantity* and *origin* of all nursery stock not exempted, and a further notice must be sent when the stock is received.

Under section 6, and part of 3, nursery stock from Europe, Japan or from the states of Vermont, New Hampshire, Maine, Massachusetts, Connecticut and Rhode Island may not be unpacked unless it has been inspected. In the case of such stock passing through the port of

Vancouver, B. C., or Winnipeg, this inspection is made at the port and not at the destination, as is the case of stock passing through the eastern ports.

REGULATIONS UNDER THE DESTRUCTIVE INSECT AND PEST ACT

1. "Inspector" means a person appointed for carrying out the provisions of the Destructive Insect and Pest Act and the Regulations made thereunder.

2. No tree, plant or other vegetation or vegetable matter infested with any of the insects, pests or diseases to which this Act applies, shall be imported into Canada except as hereinafter provided.

3. Nursery stock, including all trees, shrubs, plants, vines, grafts, scions, cuttings or buds which are not hereinafter exempted, entering Canada shall be imported only through the ports and during the periods respectively hereinafter mentioned, that is to say:

Vancouver, B. C., from October 1 to May 1.

Niagara Falls, Ont., from October 1 to May 15.

Winnipeg, Man., and St. John, N.B., from March 15 to May 15, and from October 7 to December 7.

Windsor, Ont., and St. John's, Que., from March 15 to May 15, and from September 26 to December 7.

At these points of entry the importations shall be fumigated in the fumigation houses provided for that purpose, and a certificate of fumigation will be issued, without which no stock may be taken out of bond. Importations by mail shall be subject to the same regulations.

All nursery stock originating in Japan or in any one of the states of Vermont, New Hampshire, Maine, Massachusetts, Connecticut and Rhode Island, six of the United States of America, shall, after fumigation, be subject to inspection as provided by section 6 of these regulations.

Provided, however, that the following vegetation and florists' stock shall be exempt from fumigation and may be imported at any season of the year and through any port without inspection:

(a) Greenhouse-grown plants, including roses in foliage which have been grown in pots up to three inches in dia-

meter but not larger. A certificate that the plants have been grown under glass must accompany the invoice and shall be signed by the consignor.

(b) Herbaceous perennials (the stems of which die down in winter), such as perennial phlox, peonies, sunflowers, etc.

(c) Herbaceous bedding plants (such as geraniums, verbenas, pansies, etc.).

(d) Bulbs and tubers (such as hyacinths, lilies, narcissi and other true bulbs, and also the tubers of dahlias, irises, etc.).

(e) Cottonwood or necklace poplar (*Populus deltoides*) when shipped from and grown in Dakota or Minnesota, two of the United States of America.

4. The port by which it is intended that the nursery stock shall enter shall be clearly stated on each package, and all shipments made in accordance with these regulations will be entirely at the risk of the shippers or consignees, the Government assuming no responsibility whatever.

5. All persons importing nursery stock, except such stock as is exempt from fumigation and inspection under section 3 of these Regulations, shall give notice to the Dominion Entomologist, Experimental Farm, Ottawa, within five days of despatching the order for the same, and they shall again notify the Dominion Entomologist on the arrival of the shipment in Canada.

Notice shall also be given to the Dominion Entomologist by all transportation companies, Customs house brokers or other persons importing or bringing into Canada nursery stock that is subject to inspection as hereinafter provided, immediately such a consignment is received by them. Such notice shall include the name of the consignor and the consignee, the points of origin and destination, the name of the company carrying the nursery stock, as well as the nature, quantity and origin of the same.

6. Nursery stock, not including such stock as is exempt under section 3 of these Regulations, originating in Europe shall be imported only through the ports and during the periods specified under section 3 for stock requiring fumigation, with the addition of the ports of Halifax, N. S., Sherbrooke, P. Q., and Montreal,

P. Q., through which ports such European stock may enter from September 15 to May 15. Such European nursery stock, and such other imported vegetation as the Minister may determine, entering Canada, shall be exempt from fumigation, but shall be inspected, either at the port of entry, or at its destination to which it may be allowed to proceed, but in the latter case it must not be unpacked except in the presence of an inspector.

7. If, on inspection, nursery stock or other vegetation or vegetable matter is found to be infested with any of the insects, pests or diseases hereinafter specified, it shall be destroyed to the extent deemed necessary by the inspector and in his presence. All cases, packages and packing in which such stock has been contained shall also be destroyed in the same manner.

8. Any inspector entering any lands, nursery or other premises where there is reason to believe that any of the insects, pests or diseases hereinafter specified are or may be present, shall give instructions for the treatment or destruction of any tree, bush, crop or other vegetation or vegetable matter or the containers thereof, which may be found or suspected to be infested with any of the insects, pests or diseases hereinafter specified, and such instructions shall be carried out by the owner or the lessee of the infested or suspected vegetation, vegetable matter, or containers thereof, and such remedial treatment shall be carried out and continued until the insect, pest or disease shall be deemed by the inspector to have been exterminated.

9. Compensation not exceeding two-thirds of the value as assessed by the inspector, of the vegetation or vegetable matter or containers thereof destroyed by the instructions of an inspector, shall be granted by the Governor in Council upon the recommendation of the Minister.

10. It shall be illegal to sell, offer for sale or in any way dispose of or receive any trees, shrubs or other plants, vegetable matter or portions of the same, if the same are infested with any of the insects, pests or diseases hereinafter specified.

11. The owner, occupier or lessee of

any premises or place where any of the insects, pests or diseases specified herein shall be found, shall immediately notify the Minister, and shall also send to him specimens of such insects, pests or diseases.

12. The destructive insects, pests and diseases to which the said Act shall apply shall include the following:

The San Jose Scale (*Aspidiotus perniciosus*).

The Brown-tail Moth (*Euproctis chrysorrhoea*).

The Woolly Aphis (*Schizoneura lanigera*).

The West Indian Peach Scale (*Aulacaspis pentagona*).

The Gypsy Moth (*Porthetria dispar*).

Potato Canker (*Chrysophylyctis endobiotica*).

Parasitic diseases affecting potatoes externally or internally.

Branch or Stem Canker (*Nectria ditissima*).

Gooseberry Mildew (*Sphaerotheca mors-uvae*).

White Pine Blister Rust (*Peridermium Strobi*).

13. The importation of potatoes into Canada from Newfoundland or the islands of St. Pierre or Miquelon is prohibited.

14. The Minister may, upon special request to that effect, authorize the importation into Canada of any insect, pest or disease herein specified, but for scientific purposes only.

15. The regulations made under the San Jose Scale Act are repealed.

DON'T WAIT

No man is born into the world whose
work

Is not born with him; there is always
work,

And tools to work withal, for those who
will;

And blessed are the horny hands of toil;
The busy world shoves angrily aside
The man who stands with arms akimbo
set

Until occasion tells him what to do;
And he who waits to have his task mark-
ed out,

Shall die and leave his errand unfulfilled.

—James Russell Lowell.

Seymour Arm of Shuswap Lake

A NEW FRUIT DISTRICT

RECIPROCITY or no reciprocity, there is a good time ahead for fruit lands in British Columbia. Quality is bound to tell, and the main thing is to select good land in a good district, leave the finer points of the reciprocity argument to the press politicians, and rely on Nature and the fruit-growers' own ability to maintain the standard of British Columbia fruit. The rest is a mere matter of supply and demand. The demand will always be for the best fruit, provided the price is right, and fruit grown within the province can always compete favorably with that which is imported.

It is true that the land available for fruit-growing in British Columbia is limited, and not all of the available land has the advantage of not requiring irrigation.

Of the few districts where irrigation is not required we have recently visited one that has a splendid future before it

—and that future is not far distant, judging by the manner in which it is bounding ahead at the present time.

At the beginning of last season there was but a single settler on the place, and the only building was a rude shack. The whole of the property, about 7,000 acres in extent, was secured by a local syndicate, and, with the help of some eastern capitalists, a company was formed and development work started. Today the property boasts an hotel, store, post office, school and houses to accommodate the sixty settlers there, in addition to which there is a wharf; two sections have been cleared and subdivided, and already the place looks its title—a new fruit colony.

Apart from the fruit-raising point of view the beauty of the place is remarkable and unique. Situated on the north arm of the Shuswap Lake, the land lies between two ranges of hills, densely wooded, and it gives one the impression



BATHING BEACH, SEYMOUR ARM OF SHUSWAP LAKE



SEYMOUR RIVER FALLS, B. C.

of a silted-up river; and doubtless, in past ages that is just what happened. The place is also fortunate in possessing a river which winds in and out, adds to the enchantment, and is capable of supplying a domestic water service for the rising town, and, when the Seymour Falls are harnessed, will be able to furnish sufficient electric power to meet the requirements of a city of large proportions. The falls are wonderfully pretty, and one would have to travel far to find another to match them.

The idea that the valley was formed by the silting up of a river will account for the richness of the land, which is suitable for producing the best fruits of every description, and along the river banks and lakefront all garden truck will grow to profusion. This is the opinion of all the experts who have visited it, and it is a fact that every prospective buyer

who has visited the land has shown his faith in it by purchasing a five-acre or ten-acre tract. So keen were some of the would-be settlers to get in early that they took their families in a couple of months ago and camped in the snow.

In December last a Vancouver gentleman, who was a large holder in the old company, bought out the remaining shareholders, and, with two associates, has formed a new company under the style of the Seymour Arm Fruit Lands of British Columbia, Limited. This is another step that will benefit Seymour Arm and its settlers, as the control is practically in the hands of one man, and development work can be carried on without the delay of referring to shareholders.

The coming season will see a wonderful change in the property. Large sums of money have been voted for an

extensive clearing scheme, fresh sections are to be sub-divided, the townsite is to be laid out, and an all-round scheme of development undertaken, including a domestic water service. The Provincial Government has set aside a large grant for road work, to be started as soon as the season opens, and has subsidized the steamer service, which will be greatly improved and run to an enlarged schedule.

One of the attractions of the place is the silver-sand beach, which extends for three miles along the lake shore, and already picnics for people from the Okanagan and elsewhere have been arranged for the coming season, one for

300 persons having been fixed for July month.

Where is the Seymour Arm of Shuswap Lake?

Sicamous Junction is only 300 miles from Vancouver, and a similar distance from Calgary, on the main line of the Canadian Pacific Railway; and a few hours' run on the Company's steamer, through scenery that can not be beaten in Sweden, lands you at Seymour Arm—the place destined by Nature, with the aid of a progressive development company and energetic settlers, to become world-renowned, within a short period of time, as one of British Columbia's choicest fruit-producing valleys.



DISTANT VIEW OF HEAD OF SEYMOUR ARM FROM ONE OF THE BENCHES

Hon. G. E. Foster and the British Preference

HON. GEORGE E. FOSTER writes to the editor of *The Fruit Magazine*, from the House of Commons, Ottawa, under date of March 10, 1911, complaining that we were in error when we stated that Mr. Foster was opposed to the British preference.

We have no desire to misrepresent Mr.

Foster or anybody else, but we have searched the debates of the House of Commons for 1897-8 in vain for anything to indicate that Mr. Foster supported the British Preference Bill.

Of course, a *mutual preference* is not a preference at all, but simply reciprocity. However, as a matter of fairness we quote the letter in full. Mr. Foster says:

"In your *Fruit Magazine* of March I noticed and clip the following from your editorial: 'Before we quit this subject there are two men who are entitled to some attention, viz., Geo. E. Foster, of Ottawa, and Champ Clark, of Washington.

"Many of us remember with what burning eloquence Mr. Foster denounced the British preference when it was first introduced, as calculated to ruin Canadian vested interests, and now he is just as loud in his demands for more of the same nostrum and the abandonment of the proposed commercial agreement with the United States. We wonder what a supremely delightful sensation it would produce should Mr. Foster tell the truth once.' It rather surprises me to be informed that I denounced the British preference at any time or anywhere. I had an idea that I was among the first to advocate British preference, and in 1896 I stood on the same platform as Sir Chas. Tupper and Mr. Laurier in pressing for a *mutual* preference. It is true that at that time I, as the other two mentioned, favored mutual, not one-sided, preference. When in 1897 the tariff provided for a world preference and contravened the most-favored-nation treaties, I opposed that tariff on two grounds: (1) That the world preference provided was in contradiction of the treaties, and so *ultra vires*. (2) That it was not in the interest of Canada to admit all other countries of as low or lower tariffs to a preference in the Canadian markets without a return therefor.

"In the first contention I was right, as shown by the decision of the law officers of the British Crown, in deference to which the government in 1898 repealed the world preference clause and substituted the British preference clause instead. This, though not mutual, I supported, though I would have preferred a mutual preference.

"Never before or since did I oppose the British preference.

"I do not often trouble to correct newspapers, but in the case of your estimable magazine have thought you might care to know the facts for your own information."

Kootenay Bay, B. C.,
March 20, 1911

Editor *The Fruit Magazine*,
Vancouver, B. C.

Dear Sir: If the sentiments expressed by you in regard to reciprocity were merely a matter of personal opinion little harm could follow, but as the editor of *The Fruit Magazine*—which might reasonably be expected to voice the views of the fruit-growers in British Columbia—your remarks may be misleading and prove exceedingly mischievous, especially at Ottawa.

Particularly objectionable is your misstatement of the actual situation in the second column of page 368. We are not on even footing with our American competitors in regard to cost of production. Living is higher in British Columbia. Orchard supplies are dearer, and, what is of still greater importance, labor is much higher.

We may be able to produce a few fancy boxes of high-class apples that will keep longer than those grown south, but the money in orcharding is not in the fancy boxes, but in the run of the orchard. You must also be aware that a large proportion of the apples planted heretofore in British Columbia are early varieties or others adapted to the prairie market. Under present tariff we have been able to hold only a fraction of the prairie trade on this class of fruit. American competitors could and did undersell us, as well as getting fruit on the market earlier. With free trade in fruit we can hardly retain even this fraction of the prairie trade. Perhaps if we planted only high-class winter apples from now on we could eventually hold our own in neutral markets or possibly even find a market in American cities, but what are we to do with the orchards already planted? Must we entirely abandon our home market, start over again and wait six to ten years for returns!

So far as the British Columbia fruit-grower is concerned this proposed reciprocity is a case of free trade in everything we have to sell and high protection on everything we have to buy, including labor—a jug-handled business, surely. The fact is the fruit industry is being

sacrificed, and free fruit thrown as a sop by the government to appease the demands of a kindred industry, viz., the grain-growers of the prairies. It isn't fair.—Yours truly,

R. F. LANGFORD.

Note.—The editorials of *The Fruit Magazine* are not supposed to “voice the views of the fruit-growers of British Columbia.” We claim a much wider mission. *The Fruit Magazine* is “national in scope and world-wide in its sympathy and influence,” and is published not only in the interests of the fruit-grower and the fruit-dealer, but of the fruit-consumer as well—which means the general public.—*Editor.*

IGNORANCE

A MAN may be a good citizen and yet not be able to answer the question whether a cow's ears are behind or in front of its horns; but in Ohio the legislators seem to have come to the conclusion that a knowledge of the position of a cow's ears is indispensable to the youthful citizens of the State. A Central News cable says that a bill to enforce the teaching of agriculture in Ohio schools was about to be scotched when a senator threw a bombshell into the assembly by asking the question about the cow's ears and horns. Not a man in the House could reply, and the bill was passed in triumph. The obvious answer to the question is another question. What is the breed of the cow? In the case of the Aberdeen Angus (of which the old Scotch name was the Hummle cow), the Galloway, and the Red Pole, the ears are neither behind nor in front of the horns, for the simple reason that these cows are hornless. It seems that the propounder of the question would not give the answer, and in this he was perhaps wise. The legislators in Ohio might perhaps with advantage exercise their talents in answering the following question: “When in a recumbent position it is necessary for (a) a cow, (b) a sheep, (c) a horse, (d) a dog, (e) a cat, to rise up. How is the feat accomplished in the case of each?” The answer is not as simple as it looks.

THE APPLE CROP IN THE UNITED STATES

New England:

	1910 Barrels.	1909. Barrels.
Maine	850,000	950,000
New Hampshire.	600,000	400,000
Vermont	550,000	200,000
Massachusetts ...	350,000	500,000
Rhode Island	100,000	100,000
Connecticut	300,000	200,000

Total	2,750,000	2,350,000
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Middle:

New York	3,200,000	4,100,000
New Jersey	350,000	400,000
Pennsylvania	1,600,000	2,000,000
Delaware	200,000	150,000
Ohio	850,000	1,050,000
Michigan	1,400,000	2,250,000
Wisconsin	150,000	150,000

Total	7,750,000	10,100,000
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Central West:

Indiana	450,000	650,000
Illinois	250,000	800,000
Missouri	225,000	540,000
Kansas	200,000	350,000
Nebraska	300,000	350,000
Iowa	200,000	500,000
Arkansas	250,000	350,000

Total	1,875,000	3,540,000
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Far West:

Colorado	550,000	450,000
Idaho	200,000	100,000
Utah	175,000	150,000
Montana	100,000	100,000
California	1,300,000	1,100,000
Oregon	575,000	300,000
Washington	800,000	600,000

Total	3,700,000	2,800,000
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Southern:

West Virginia ..	600,000	450,000
Virginia	700,000	600,000
Maryland	350,000	275,000
Kentucky	1,100,000	1,200,000
Tennessee	1,000,000	1,100,000

Total	3,750,000	3,625,000
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All other	4,000,000	3,000,000
U. S. crop	23,825,000	25,415,000

Hygiene in the Home

By EMELYN LINCOLN COOLIDGE, M.D., in the "Public Health Journal"

PHYSICIANS of today are giving much thought to preventive medicine. We are all beginning to realize how true is the old saying, "An ounce of prevention is better than a pound of cure." In order to prevent illness we must know how to live correctly, day by day making the most of our opportunities and building up a strong body and mind to fight disease.

Water is one of our greatest blessings, and since its various uses are innumerable, we shall first consider its employment externally. This naturally leads us to the daily bath.

The president of Bryn Mawr College said in one of her opening addresses to the students: "In our generation a great gulf is fixed that no democracy nor socialistic theories can bridge over, between men and women that take a bath every day and men and women that do not." She did not put this one bit too strongly; a daily bath of some kind is necessary to the health and self-respect of everyone.

We are constituted very differently and the sort of bath that gives life and vigor to one person only causes another to feel languid and miserable; therefore, first find out the kind of bath that suits you best and then take it not once nor twice a week, but every day in the year.

Some people have the misguided theory that a bath more than once a week is weakening. This is an old-fashioned notion which originated in the days when stationary bathtubs were unknown. The right kind of a bath is not weakening, but decidedly strengthening.

Mothers often ask me when they may stop giving their babies a daily bath, and my reply is always the same, "Never."

If you have to let other things go, take time somehow for a daily bath. If you are too rushed in the morning, then take it in the evening or whenever you can snatch a few minutes from a busy day.

The cold bath in the morning is the

best for some people, but by no means for all; in fact, it is very harmful to many. If you do not feel in a warm glow and decidedly invigorated after a cold bath followed by a brisk rub with a coarse towel, then do not repeat the experiment, since it is demonstrated that you are not constituted so that you can stand this sort of treatment.

Sometimes a person can take a rapid cold sponge bath when a cold tub bath or even a cold shower bath at the end of a warm tub bath can not be borne. It is often a good plan to stand in a tub of warm water and very quickly sponge the upper part of the body with a wet cloth wrung out of cold water. Sponge one part at a time, dry it by a brisk rubbing, then go on to the next part. The whole body can then be gone over thoroughly in a short space of time and without chilling a large surface. Before the lower extremities are bathed some of the upper garments may be put on. This plan of procedure is often very successful with delicate, thin, nervous children and young girls and women who have not enough vitality to warm up the body surface after a cold plunge bath.

If one is so unfortunate as not to be able to bear cold water at all, then try the tepid bath, in the tub, if possible, and if not then use a wash-cloth dipped in tepid water (98 to 100 degrees F.).

It is usually wise to take the warm bath at bedtime, because it opens the pores of the skin more than the cold bath and it is not very safe to go directly out in the cold air in this condition. A warm bath at bedtime will often induce a quiet, restful sleep when all other means fail.

It is at this temperature (98 to 100 degrees F.) that I usually advise mothers to begin a new baby's tub bath, reducing the temperature of the water as the child grows more vigorous until it can stand a cold bath or at least a cold douche directly after the warm bath.

Tired school girls or those that go to

business often find this tepid bath at night wonderfully restful.

As for the hot bath (105 deg. F. or over), I think as a rule it is not very advisable, unless ordered by a physician for some special purpose. It is this kind of a bath without the cold douche at the end that is more apt to be "weakening" than any other kind.

Russian and Turkish baths each have their uses, but they should not be overdone nor taken without some good reason. Those who take them "just for fun" and every day or two, in my experience, lose much more than they gain.

Various kinds of hot baths are often very helpful for rheumatic disorders; also for liver and kidney trouble, but like all other medicinal treatment they should be ordered by the attending doctor and suited for the exact individual needs of the patient.

Salt water baths are often very healthful as well as enjoyable, but there are some constitutions that cannot stand them. The best kind of a salt water bath is that taken in the ocean surf. The reaction from the massage given by the waves, combined with the stimulating properties of the salt water, produces a delightful sensation given by nothing else. It is exceedingly foolish to remain in the water long enough to become chilled and blue, however. Go in quickly, get wet all over at once and stay in only while you are warm and comfortable; 15 or 20 minutes, half an hour at the most.

When it is impossible to get the salt water, some find sea salt dissolved in a tub bath at home helpful. This sort of a bath may be taken either cold or tepid. Babies under two years of age generally do better if the salt water is brought to the house and has the chill just taken off it before they are put into the tub. Salt water baths often aid in curing some forms of skin trouble. Women and children who take cold very easily are often helped by a brisk salt water sponge bath of neck and chest every morning, if this is followed by a brisk rub. It acts as a mild stimulant and improves the circulation.

Every mother and daughter should know how to give a mustard bath. It is a valuable household remedy. For a

heavy cold a mustard foot bath is still often used. One point should be kept in mind in giving all kinds of mustard baths—i.e., see that your mustard is well dissolved and is not floating around in the water in lumps. To insure this the mustard should first be mixed with a little cold water until a perfectly smooth paste is formed; this paste may then be thoroughly stirred into the tub or basin of water, being 100 to 105 degrees F. The proportions are one-half a teacupful to each gallon of water, the temperature of the water being 100 to 105 degrees F. The mustard foot bath should be given in a deep foot tub and a blanket should be wrapped around the legs of the person taking it, so that tub and all are covered. This should be continued until the skin on the feet and legs is quite red; they should then be well dried and wrapped in a warm blanket and the person put at once to bed.

A full bath in mustard water is often prescribed for convulsions, in which the proportions of mustard and water are the same as that for the foot bath. The temperature of the water should be about 105 degrees F. The object of this bath is to bring the blood away from the brain and to the surface of the body; therefore, when the skin is red it is best to stop the bath and wrap the patient in a towel and a warm blanket. While the mustard bath is being given, an ice cap or else cold cloths should be kept on the patient's head.

Tepid (98 degrees F.) sponge baths with one tablespoonful of alcohol to a small basin of water are very valuable for reducing fever and quieting a restless sick person. This method of treatment should always be tried before "fever medicines" are resorted to. We all know the value of baths in typhoid fever. Sometimes the simple sponge is enough; again the tub bath is required.

On warm days a sponge bath with one tablespoonful of bicarbonate of soda to a basin of water 98 degrees F. is very cooling. It is especially valuable for cases of prickly heat and also for hives.

Another sort of bath which is frequently used is the bran bath. A cupful of bran is put into a cheese cloth bag and then squeezed about in the bath water until

the latter looks quite "soapy." Cases of irritable skin, eczema, etc., are often treated with this bran bath, as in such troubles plain water or water with soap is badly borne.

A word as to soaps:

Strong soap with a lot of alkali should not be used in any sort of a bath. White Castile soap, or if one prefers, a kind that is very delicately scented, like one of the pure French soaps, may be used, and is really necessary to most people, but the soap should be well rinsed off the body at the close of the bath.

As for sponges, I can only say, do not employ them. They are simply a nest of germs. Use a washcloth, keeping two in constant use, one for the face and neck and another for the lower part of the body; have them boiled, then hang out in the sun two or three times weekly. See also that the nail brush used in the

bath is thoroughly rinsed, sometimes boiled and always sunned and aired every day. A good deal of waste skin and matter are thrown off during the bath, and unless the toilet articles are carefully attended to they will soon be unfit for use.

Water is used externally in various other ways, both as hot and cold applications. For many forms of bladder and kidney troubles hot compresses of cloth wrung out of water as hot as can be borne are invaluable. Everyone knows how many are the uses of the household hot water bag. From baby with an attack of colic to grandma with a pain almost anywhere, the hot water bag is a comfort. Water is used cold for many kinds of sprains, bruises and inflammations. A cold compress around a sore throat is often a great relief. Very cold water on the nape of the neck will sometimes stop a nose-bleed or even help a headache.

Apple Scab

WHAT IT IS AND HOW TO FIGHT IT

By R. KENT BEATTIE, Botanist, State College, Pullman, Washington

THE disease is caused by a fungus which lives in the apple or in the apple leaves. The fungus attacks the fruit and the leaves.

In the spring of the year the spores begin to fly just about the time that the blossoms are ready to burst, and continue flying in the air for a period of several days, lighting on young leaves and young fruit. For example:

A young apple has just dropped its blossoms, and a spore lights on the side of it. The spore will grow and penetrate the skin of the apple. It will begin to grow in a spot under the skin. In a short time this spore begins to produce other spores by means of a little stalk which comes through the skin and gives off the spores. You will see a tiny olive-green colored spot on the side of the apple; that is, about the color of a green olive. That is the color of the apple scab spot. The spot grows in size as more of

the thread-like processes pierce through the skin, until it may be a large spot. If there are several spots close together, after a while they may run together and make a large, irregular spot.

If there is enough scab it may distort the whole side of the apple; wherever this fungus affects the apple, it is likely to "coarsen" the tissues, making the apple corky.

Anything which irritates the growing tissue has the same physiological effect on it as would appear if you rubbed your skin continually and calloused it. The scab thus makes a corky spot on the apple. I have seen apples so corked and distorted that it was hard to tell whether they were apples or blocks of wood. That condition is not very common on this side of the mountains. West of the mountains there will be very badly calloused places. When the spores are ripe they begin to fly, the wind catching them

and distributing them to other leaves and fruit. Wherever they strike a leaf or fruit, if it is delicate enough, that is, if it is young and tender, a new apple scab will be started. This produces a new crop of spores, and the reproduction continues in this way on through the season.

Sometimes the affected leaves drop off, depending upon the severity of the attack. Later in the year, after the active growing season is over, the olive-green spots will nearly all turn brown, and the fruit will begin to be corky. Much scab will still be in existence, having been tramped into the ground.

The scab does not die when the leaves fall to the ground. The fungus continues to live under the skin of the leaf, and in this retreat is protected through the winter.

For a great many years, until six or eight years ago, in fact, it was supposed that the fungus on the apples was different from the one on the leaves. Nobody knew they were the same. About ten years ago a German investigator succeeded in working out the connection between the two, and shortly afterwards a man at the Illinois experiment stations did the same thing. We have repeated the work at the Washington experiment station. Therefore, we have to deal with apple scab summer spores and apple scab winter spores.

In the spring of the year the spores are being blown about by the wind and light on the trees. You will find the first place where the disease appears on the apple tree is on the middle of the back

of the young leaf. This is because it is the middle of the back of the leaf that gets out of the bud first. These spores started from the leaves on the ground.

The first thing to do, therefore, is to get the leaves under. Do not have leaves lying on the surface of the ground in your orchard. Clean up. The leaves will do you more good under ground than on the surface. Of course, some will be left in fence corners and other inaccessible places, but put all the leaves under ground you can.

The next thing is to poison these summer or winter spores when they begin to fly. The best time to do this is just before the blossom is opening. As a general rule we do not like to spray while the blossoms are opening. We do not like to put anything on the blossoms which would kill the insects that pollenate them. Spray with sulphur lime just when the centre blossom of the cluster is ready to burst.

Out in this country the man who does not thin out his orchard is hardly a commercial orchardist. The apple you want to save is the centre one in the cluster, which usually comes out first. As a rule there will be only a few apples which set, though there may be a dozen or so blossoms in the cluster. Of those that set you are going to save only one. The blossom you are trying to save is the one which is going to set the apple, and the time to spray should be based on the apple which is going to be saved. This is why we say to spray when the centre blossom of the cluster is ready to burst.

Making Over the Apple Tree

By J. H. HALE, in "Collier's"

FOR the reason that an apple tree once planted in fairly congenial soil will take care of itself and produce some fruit, the tendency has been to take from the tree whatever was coming and give little or nothing in return. The apple early became an article of sale, but commercial orcharding, as a special business on any extended scale, is

of comparatively recent origin. Fungus troubles and insect pests caused a steady deterioration in appearance, if not in quality, while the greater culture, as well as wealth, of our people made an ever-increasing demand for fruits that were beautiful as well as good. Consequently the apple had to take a back seat and make way for peaches, oranges, grapes,

and other small fruits for table use because of their finer appearance. Whoever remembers the apples of even ten years ago, and compares them with those now on the market, must wonder what has been taking place in the orchards. While it is true that many of the offerings are from new orchards of the Rocky Mountain country and the far Northwest, much of the very finest of fruit has come from old trees that not so long ago produced only dull-skinned, specked and wormy apples. The fact is that we are just learning that nearly every branch of agriculture is a sort of manufacturing process, the soil, seed, and plant being only a part of the machinery of production.

These modern methods require five or six operations a year upon the tree itself, and, being somewhat difficult to practise upon the old-style, high-headed tree, nearly all new plantings are made with nursery trees headed much lower than was formerly the custom, and a plan of yearly pruning adopted that aims to make a broad, open-headed tree so close to the ground that most of these operations can be carried on without the use of a ladder.

To the amateur the word 'pruning' sounds a bit scientific and unattainable, while in actual practice little is required aside from everyday horse sense, a good pruning knife, and a saw.

Yet, while it is one of the essentials of fine fruit production, no one need expect perfect fruit from pruning alone.

The broad, low, open head is most desirable for the apple tree, but you can obtain most any shape or effect you like by annually cutting out all crowding branches, that there may be plenty of room for the sunlight and air. Whatever branches need checking in their upward or outward growth should be cut back just beyond a bud that is on the side of the branch in the direction you wish the new growth to take; for it is these little buds nearest to the end cut that will start out the new and strongest growth of the following season and thus be the leaders in that direction.

Pruning when tree or plant is in dormant condition tends to stimulate new and rapid wood growth, which is desirable in young trees, while to prune in the

early summer season, when a tree is in full vigor of growth, checks wood growth and tends to fruitfulness. Therefore, as a general proposition, trim young apple trees in late February or March when dormant, and the older fruiting trees in late May or June.

This at least is to be my practice on nearly three hundred acres of apple orchards on the rocky hill lands, where I am trying to grow fine table apples for the high-class family trade that demands beauty as well as quality, and I want my trees low down where we can easily get at them, in order to put on the finishing touches by pruning, thinning and spraying.

By liberal mulching with stable manure or other coarse material reinforced by chemical fertilizer, fairly good apples may be grown in sod land, but it is far better to till the land whenever possible for at least the three earlier growing months of each season.

ENTIRELY TOO PERSONAL

POLICEMAN CASEY had ordered a pair of shoes at Rosenber's store and was about to try one of them on when the clerk reached for it and deftly sprinkled some French chalk in it to ease the forthcoming strain. When he handed it back the patrolman threw it on the floor, pulled on his own shoe and started out.

The proprietor had noted the scene. "What's the matter, Mr. Casey?" he panted as he caught up with him. "Was the clerk sassy or anything?"

For a moment Casey glared at him in almost speechless anger, then observed with icy dignity: "If I can't come into a place and thry on a pair av shoes widout havin' chloride av lime put in thim beforehand, I'll thrade somewhere else."

NO TIME TO LOAD

TWO Irishmen who were out gunning had but one gun between them, and the one with the gun, seeing a bird on the end of a limb, took careful aim to shoot, when the other cried:

"Fer Hivin's sake don't shoot, Pat."

"Why?" said Pat, astonished.

"The gun isn't loaded," said the other.

"But I tell ye the bird won't wait," said Pat.

THE GATEKEEPER

By ISABEL ECCLESTONE MACKAY

The sunlight falls on old Québec,
 A city framed of rose and gold,
 An ancient gem, more beautiful
 In that its beauty weareth old.
 O Pearl of Cities! I would set
 Thee higher in our diadem,
 And higher yet and higher yet,
 Lest generations still to be
 Should lightly hold thy fame and thee!

'Twas here that gallant Champlain stood
 And gazed upon thy mighty stream,
 Thy tow'ring rock-walls, buttressed
 high—

A gateway to a land of dream.
 And all his silent men stood near
 While the great fleur-de-lis fell free,
 Too awe-struck they to raise a cheer!
 And while the shining folds outspread
 The sunset burned a sudden red.

Here paced the haughty Frontenac,
 His great heart torn with pride and
 pain,

His clear eye dimming as it swept
 The land he might not see again.
 This infant world, this strange New
 France

Dropped down as by some vagrant
 wind
 Upon the New World's vast expanse,
 Threatened yet safe! Through storm
 and stress
 Fate's hostage to the wilderness!

Here, when to ease her tangled skein
 Fate cut the threads and formed anew
 The pattern of the things she planned,
 And red war slipped the shuttle
 through,
 Montcalm met Wolfe! The bitter strife
 Of flag and flag was ended here—
 And every man who gave his life
 Gave it that now one flag may wave,
 One nation rise upon his grave!

The twilight falls on old Quebec
 And in the purple shines a star,
 And on her citadel lies peace
 More powerful than armies are.
 O fair dream-city! Ebb and flow
 Of race feuds vex no more thy walls.
 Can they of old see this, and know
 That, even as they dreamed, you stand
 Gatekeeper of a peace-filled land!

HE WONDERED WHY

A REVIVAL meeting was in progress,
 and Sister Jones was called upon
 for testimony. Being meek and humble,
 she said:

"I do not feel as though I should stand
 here and give testimony. I have been a
 transgressor for a good many years and
 have only recently seen the light. I be-
 lieve that my place is in a dark corner
 behind the door."

Brother Smith, following the example,
 said:

"I, too, have been a sinner for more
 than forty years, and I do not think it
 would be fitting for me to stand before
 this assembly as a model. I think my
 place is behind the door, in a dark corner,
 with Sister Jones."

And he wondered why the meeting was
 convulsed with the laughter of those who
 had come to pray.

PARIS AND POOR CHILDREN

PARIS sends its children to school and
 supplies the poor ones with cloth-
 ing, shoes, and food, as well as with free
 books, slates, stationery and instruments.
 And it arranges that no child shall know
 which of the others are charity pupils. It
 sends poor children on summer outings.
 It builds houses and rents them at low
 rates, giving preference to the poorest
 and largest families. It taxes every
 theatre ticket ten per cent. for a public
 fund which furnishes every year fifteen
 thousand free beds in hospitals and as
 many more in asylums. This fund has also
 built a maternity hospital, where no
 questions are asked. It helps to bring up
 thousands of poor children. It furnishes
 free medicine for the sick poor. It collects
 a per diem from the employer for a work-
 man who receives injury in the discharge
 of his duties. It spends ten million dollars
 yearly for benevolence.

VOLUME II of *The Fruit Magazine*
 —October, 1910, to March, 1911
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A few copies of Volume I—October,
 1909, to September, 1910, (old style)—
 are still on hand, at \$3.00, bound in half
 leather, and postage prepaid.

POMONA

By Ernest McGaffey

What time the sylvan spaces mute
Were mellowed by September's wine,
And red and russet hanging fruit
Swayed to the moods of shade and shine,
Pomona through the orchard came
A little modern Goddess there,
The while the sunlight, like a flame,
Stooped as it passed, and kissed her hair.

What time the sap in April flowed
And all the land was drenched in green,
And starred beside the country road
The daisy's milky shield was seen,
Pomona through the orchard strayed
A little modern Goddess there,
While hide and seek the sunshine played
Within the tangles of her hair.

What time the buds to blossoms blew,
And droning hum of myriad bees
Buzzed in a drowsy chorus through
The fragrant aisles of apple trees,
Pomona through the orchard strolled
A little modern Goddess fair,
The sunshine on her tresses gold
Herself the blithest blossom there.

What time the days have come and gone
Through patterns Time at leisure weaves,
With web and woof of dusk and dawn
Shot through and through with flying leaves,
Pomona's feet no more will pass
A little modern Goddess there,
A shadow thrown on Autumn's glass,
And all the orchard waste and bare.

WHAT TIME IS IT?

What time is it?
Time to do well;
Time to live better;
Give up the grudge;
Answer that letter;

Speaking that kind word to sweeten a
sorrow;

Do that good deed you would leave till
tomorrow.

What time is it?
Time to be earnest,
Laying up treasure;
Time to be thoughtful,
Choosing true pleasure;

Loving stern justice, of truth being
fond—

Making your word just as good as your
bond.

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Maxwell Smith, Editor.

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Something Great

*The trial was ended—the vigil past;
All clad in his arms was the knight at last.
The godliest knight in the whole wide land,
With face that shone with a purpose grand.
The King looked on him with gracious eyes,
And said, "He is meet for some high emprise."
To himself he thought, "I will conquer fate;
I will surely die or do something great."*

*So from the palace he rode away;
There was trouble and need in the town that day.
A child had strayed from his mother's side
Into the woodland dark and wide.
"Help!" cried the mother with sorrow wild—
"Help me, Sir Knight, to seek my child!
The hungry wolves in the forest roam;
Help me to bring my lost one home!"*

*He shook her hand from his bridle rein;
"Alas! poor mother, you ask in vain.
Some meaner succor will do, maybe,
Some squire or varlet of low degree.
There are mighty wrongs in the world to right;
I keep my sword for a noble fight
I am sad at heart for your baby's fate,
But I ride in haste to do something great."*

*One wintry night when the sun had set,
A blind old man by the way he met;
"Now, good Sir Knight, for Our Lady's sake,
On the sightless wanderer pity take!
The wind blows cold, and the sun is down;
Lead me, I pray, till I reach the town."
"Nay," said the knight; "I cannot wait;
I ride in haste to do something great."*

*So on he rode in his armor bright.
His sword all keen for the longed-for fight,
"Laugh with us—laugh!" cried the merry crowd.
"Oh, weep!" wailed others with sorrow bowed.
"Help us!" the weak and weary prayed.
But for joy, nor grief, nor need he stayed.
And the years rolled on, and his eyes grew dim,
And he died—and none made moan for him.*

*He missed the good that he might have done.
He missed the blessings he might have won.
Seeking some glorious task to find,
His eyes to all humbler work were blind.
He that is faithful in that which is least,
Is bidden to sit at the heavenly feast.
Yet men and women lament their fate,
If they are not called to do something great.*

—Florence Tyler.

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VOL. III

MAY, 1911

No. 2

American Pomological Society

A T a pomological convention held at Vancouver, B. C., under the auspices of the First Canadian National Apple Show, November 2, 1910, with upwards of 100 delegates present from many parts of the North American continent, the following report of a special committee was unanimously adopted:

"In the opinion of your committee there are many changes that should be made in the rating of varieties given by the American Pomological Society, and we recommend that the next meeting of the American Pomological Society appoint a new committee to revise the rating, making a double rating, basing it upon quality and commercial value as found in the localities or districts where the varieties are grown to the highest state of perfection. We also recommend that each apple-growing district on the continent that has a local society be requested to make recommendations regarding ratings of apples grown to perfection in their respective districts to the American Pomological Society at its next meeting, in order that the new committee that will undoubtedly be appointed may have proper data at hand to assist them in their important work.

"Your committee also recommend that amongst other changes should be the following: that McIntosh Red be raised to 8-9, Winesap to 9, Northern Spy to 10, and Baldwin to 6-7.

"(Signed) "G. E. ROWE,
"MARTIN BURRELL,
"W. K. NEWELL."

As a result of this initial movement, Mr. G. E. Rowe brought the matter up at the meeting of the A. P. S. held at Tampa, Florida, early in February last, with the result that the following committee was appointed—viz., C. E. Rowe, Grand Rapids, Mich. (chairman); U. P. Hedrick, Geneva, N. Y.; E. H. Shepard, Hood River, Ore.; J. L. Dumas, Walla Walla, Wash.; A. H. Rogers, Watsonville, Cal; Prof. E. R. Lake, Washington, D. C.

Mr. Rowe has requested *The Fruit Magazine* to urge apple growers to forward to him their recommendations in regard to the raising or lowering of values of varieties. In sending recommendations to Mr. Rowe, apple growers should give special attention to the particular varieties which may be brought to the highest degree of perfection in their respective localities. The highest degree of perfection obtainable in any part of the continent should be the basis of value placed on each particular variety. Canada has started this movement for the readjustment of ratings, and we trust she will take a deep interest and an active part in guiding the deliberations of this committee.

The present officers of the American Pomological Society are:

President—L. A. Goodman, Kansas City, Mo., re-elected.

First Vice-president—G. L. Tabor, Glen St. Mary, Fla.

Secretary—John Craig, Ithaca, N. Y., re-elected.

Treasurer—L. R. Taft, Michigan, re-elected.

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IDAHO—Silas Wilson, Nampa.

ILLINOIS—H. M. Dunlap, Savoy.

INDIANA—J. A. Burton, Mitchell.

IOWA—C. G. Patten, Charles City.

KANSAS—F. W. Dixon, Holton.

KENTUCKY—C. W. Matthews, Lexington.

MAINE—D. W. Knowlton, Farmington.

MANITOBA—S. A. Bedford, Brandon.

MARYLAND—C. P. Close, College Park.

MASSACHUSETTS—W. C. Strong, Waban.

MICHIGAN—George W. Rowe, Grand Rapids.

MINNESOTA—A. W. Latham, Minneapolis.

MISSISSIPPI—A. B. McKay, Agricultural College.

MISSOURI—C. W. Dutcher, Warrensburg.

MONTANA—M. L. Deane, Missoula.

NEBRASKA—G. A. Marshall, Arlington.

NEVADA—Ross Lewers, Franktown.

NEW HAMPSHIRE—C. C. Shaw, Milford.

NEW JERSEY—H. Roberts, Moorestown.

NEW MEXICO—Parker Earle, Roswell.

NEW YORK—W. C. Barry, Rochester.

NORTH CAROLINA—J. Van Lindley, Pomona.

NORTH DAKOTA—C. B. Waldron, Fargo.

NORTHWEST TERRITORIES—Angus Mackay, Indian Head.

NOVA SCOTIA—R. W. Starr, Wolfville.

OHIO—W. R. Lazenby, Columbus.

OKLAHOMA—O. M. Morris, Stillwater.

ONTARIO—A. McNeill, Ottawa.

OREGON—J. R. Cardwell, Hood River.

PENNSYLVANIA—H. A. Chase, Philadelphia.

PRINCE EDWARD ISLAND—A. E. Dewar, Charlottetown.

PORTO RICO—H. C. Hendrickson, Mayaguez.

QUEBEC—N. E. Jack, Chateaugay Basin.

RHODE ISLAND—J. L. Carpenter, Cumberland.

SOUTH CAROLINA—J. B. Wiggins, Chester.

SOUTH DAKOTA—H. C. Warner, Forestburg.

TENNESSEE—C. A. Keffer, Knoxville.

TEXAS—E. W. Kirkpatrick, McKinney.

UTAH—E. D. Ball, Logan.

VERMONT—D. C. Hicks, Clarendon.

WASHINGTON—H. M. Gilbert, North Yakima.

WEST VIRGINIA—Mrs. S. W. Moore, Elwell.

WISCONSIN—S. H. Marshall, Madison.

WYOMING—B. C. Buffum, Laramie.

COST OF PRODUCTION

A CORRECT statement of 1910 fruit from eight acres of orchard owned by Mr. B. F. Tussing, Fruitland, Idaho. Statement as given to Mr. J. F. Littooy, consulting horticulturist of Mountain Home, Idaho:

	Trees	Boxes Apples produced
Jonathans	100	1566
Rome Beauties	176	3503
Wte. Win. Pearmain	47	780
Mammoth Bk. Twigs	18	371
Oregon Reds	12	151
Ben Davis	4	48
Delaware Reds	13	135
Gravenstein	15	294
Arkansas Blacks ..	180	2439
On 8 acres. Total	565	9677

GRADES

Extra fancy, 6048 boxes sold for \$8164.80
 Fancy, 2310 boxes sold for..... 2541.00
 Choice, 1319 boxes sold for.... 1050.75

Total, 9677 boxes, received. \$11,756.55

Av. yield, 1209 boxes per acre \$ 1 469.57

Expense account to be deducted from the above as follows:

HARVESTING

	Per box.
Boxes and making the same.....	.13
Packing .....	.05
Sorting .....	.02
Paper .....	.02
Nailing boxes and help in packing house .....	.03
Hauling to cars, loading and bracing .....	.02
Hauling from orchards to packing house .....	.01
Picking .....	.04
Cost of picking, packing and handling crop, per box.....	.32

ORCHARD EXPENSES

Interest on investment.....	\$ 960.00
Pruning and hauling brush....	160.00
Cultivating	96.00
Thinning fruit	95.00
Spraying	80.00
Irrigating	48.00
Taxes	44.00
Propping trees	40.00
Water assessments	14.00
Repairing fences	8.00

Total\$1545.00

Per box.

Orchard expense .....	.16
Harvesting expense .....	.32

Total cost of production per box .48

Gross returns, 8 acres\$11,756.55

Cost of production 4,644.95

Net balance 8 acres, 12-year-old orchard\$7,111.60

STATE OF IDAHO, COUNTY OF CANYON

AFFIDAVIT OF B. F. TUSSING

B. F. Tussing, of lawful age, being duly sworn, deposes and says that the above statement is correct.

B. F. TUSSING.

Subscribed and sworn to before me this 9th day of February, 1911.

JOS. CRITCHFIELD,
 Notary Public.

ONLY TREE IN SHETLAND

UP a little lane of Lerwick's one street there is a garden. At least, it is an inclosed space. In the middle of this space there is a tree. It is not a very tall tree; you could, in fact, toss a biscuit over its branches, but still it is a tree—the only tree in Shetland. And Shetland is proud of it. Children who are brought for the first time to see the wonders of one-streeted Lerwick are shown this tree. This is not fiction. It is the only tree in Shetland.

As there are no trees in Shetland, there are no birds, except, of course, the sea-gulls, which you can number by the thousand. The seagulls are the sparrows of Lerwick, and, as such, they have a greater share in the town's life than have the sparrows of London. In the morning-time you will note that a seagull sits on every chimney pot. Seagulls swoop and hover over every roof in the town.

The air is full of their strange, high, plaintive, haunting cries. Their sad, shrill, long-drawn cries are to Lerwick as the chattering of sparrows or the cawing of rooks are to us. Every house has its own familiar seagulls and every street its own band of seagulls. They never mix. The children in each house have a pet name for their own particular seagulls, and, having called them by those names, they feed them every day. And each seagull knows what is meant for him.

No seagull attached to one house ever seeks to eat the food scattered from the house next door. He does not dare; the other gulls would kill him. So all day long the seagulls hover and call over the roofs of Lerwick. The people of the town, if they come across a little pile of rice laid upon the roadway, step over it with care. They know that it is placed there for some seagull. And at night the seagulls leave their own appointed chimney pots and fly gracefully away to their resting places on the rocks of the Isle of Noss.

A few copies of Volume I—October, 1909, to September, 1910 (old style)—are still on hand, at \$3.00, bound in half leather, and postage prepaid.

A WORD ABOUT ALKALI

THERE is plenty of water in the irrigation ditches at present, but evaporation is going on, and more or less waste is constantly taking place. This brings us around to the old proposition of excessive irrigation, which in time fills the soil with water and dissolves the alkali salts. The evaporation of the water from the ground brings the salts up, and leaves them at or near the surface in constantly increasing quantities. Unless natural drainage courses are present or artificial ones are created, the inevitable result of excessive irrigation is that the land becomes too wet or too alkaline for the growth of crop plants.

This problem of underground waters should be constantly in mind, not only in the selection of an irrigated farm, but also in its management. It does not suffice that a farmer himself use irrigation water judiciously, for the reckless use of water on adjacent higher land may ruin a farm completely. It is true that either underground waters or alkali alone may cause trouble in some cases, but they occur most frequently together and both yield to the same remedy, which is adequate drainage.

There are a few irrigated places in this country where a high underground water table is not a menace to crop production, and where sub-irrigation is practised, but in these sections there are unusual local conditions. In the great majority of cases where the underground water table is so close to the surface that capillary action can bring water up from the lower depths of the soil to be evaporated at the surface, serious trouble with alkali is almost certain to follow. There are a few localities where alkali is a serious problem which have no well-defined underground water table. In such cases the soil is generally so heavy as to be nearly or quite impervious to any leaching action of water.

When this is the case, the farmer is confronted with an extremely difficult problem which involves special treatment of the soil either by proper tillage methods or by the addition of manure or gypsum in order to overcome the imperviousness. The one certain remedy,

however, for alkali difficulties is drainage. Wherever it is possible to bring about a progressive downward or lateral movement of water through the soil, alkali ceases to be a problem. When this is not practicable, and where alkali occurs in relatively small quantities, a temporary postponement can be obtained by the sparing use of irrigation water to wash the salts down into the soil and by thorough tillage after irrigation, which will tend to prevent the return of the salts to the surface through the capillary movement of the water.

TIMES HAVE CHANGED

WHEN I was young I used to go adown the long potato row, and whack the weeds out with a hoe. Or, early in the summer morn, with one old mule, morose, forlorn, I'd go to cultivate the corn. All through the summer day I toiled, my raiment reeking wet and soiled, and I was fried and baked and broiled. And when at night I sought my bed my feet were like two tons of lead, and till next morning I was dead. When to the country I repair, and see the wondrous changes there, I always go up in the air. For now the farmer surely feels like Cleopatra as he reels along on plows with painted wheels. He drives a large and handsome team; his implements are like a dream; spring seats are spiked to every beam. He blithely tills his fertile lands, and never soils his lily hands, nor in the mud and gumbo stands. His pants are creased and show no dirt; his feet are by the thorns unhurt. he often wears a par-boiled shirt. And when he goes to town he makes the journey in a brace of shakes; his auto runs to beat the snakes. He has a gas plant of his own, a bathroom and a telephone, and often he has scads to loan. Thus are the old world's changes rung! It seems to me that I was stung long, long ago, when I was young!

—Walt Mason.

Volume II of *The Fruit Magazine*—October, 1910, to March, 1911—is now obtainable, bound in half leather, at \$2.50 a volume, postage prepaid.

The Call to the Farm

By C. S. HUBBS

THE eye of the East is on the West." During the past year we have often heard this remark, and only a limp optimist or a grumbling pessimist would think or believe otherwise. Western men travelling in the East saw the signs of the times, and the Eastern man felt that peculiar pulsation indicative of Western travel when he saw and talked with the man who had been and seen and knew. One year ago a British Columbian journeyed to the hub of the middle west, Winnipeg—the Chicago of Canada—and talked with the pioneer of the earlier frontier and with the younger men, the builders of a modern metropolis of a wonderfully vast and rich prairie land, but amidst the rush of work to build and while in the very lap of pride to see their city grow and send its broad and beautiful streets in all directions, there was a smouldering ember of pioneer blood inherited from the Celt and Saxon breed which looked still to the West to follow men of their own blood. And that which could be seen and felt at the hub of Canada's prairies was and has been the spirit of many cities to the South and to the East and on to the continent beyond the Atlantic; and now in 1911 at Vancouver, the "City of the Lions' Gateway," we know that men who looked this way have come to see at closer range their vision, for from the boats and trains to the wharves and depot platforms step men and women and boys and girls from every white man's land. Not by the dozens nor by the scores nor by the hundreds, but by the thousands, Vancouver is receiving men and women from every province and country; people coming to mould and realize their vision; and surely the man of the city who asks the question, "What is to be done with all these people?" deserves some consideration. But is the man who is altogether of the city the proper man to solve the question?

Dr. Jas. Macdonald, editor of the "Toronto Globe," when addressing the members of the Canadian Club, Vancouver,

during his recent visit to the coast, feared for this portion of Canada, if we continue to allow Vancouver, New Westminster and Victoria to have almost one-half the population of our province—one of so great an area and so rich in forest, field and mine, and that is where Dr. Macdonald showed himself a bigger man than to be of the city alone. He knows that cities are incidents; that the great broad fields around must be the producers, and to these fields the people of the farms reach out the glad hand and invite all newcomers of the right blood and brain to join them and live that free, healthy and useful life which makes them meet every man on the square. And in the meeting there is inspiration. Nor do we mean this remark to be made in a disparaging way toward the men of the city. The city is an incident, yet a necessary incident, and has its necessary vocations which build the keen intellect and post-graduate brilliant business talent; but for freedom we turn to the country and to the highest vocation which men can follow, and in the pursuit of it keep strong the sound mind in the sound body and mould the man of as "fine financial mind and business acumen" as the city grows.

However, it is not our intention to argue the advantages of either rural or city life. In this province of British Columbia we want to tell our newcomers that we have broad valleys and great stretches of rich virgin soil to till, and we ask them to come and to bring their energy and visions of beautiful homes in a most beautiful country—a country made glad by a climate magnificently grand, and wealthy with the wealth of Nature's best gifts. Take the next train and come along to the new hinterland which is being made close to our great coast cities by railways net-working it. Remember that the Canadian Pacific Railway brought you by a route which perhaps might excuse a Canadian-Britisher who dreamed of a "sea of mountains" and let the poetic fluid scribble

his dreams, and perhaps Rudyard Kipling might be saved the cane when we see him looking at the great majestic snow-capped mountains and feeling he had not mused in vain when he mused "The Lady of the Snows." But let that be as it may. The late Sir John A. Macdonald's vision to build a great trans-continental railway was a stupendous vision, and Canadians would not permit a criticism to fall upon the memory of that distinguished gentleman, whose keen intellect, the very acme of statesmanship, could see so far, though the latter part of this great railway follows the line of least resistance through a seemingly impossible bulwark of mountains.

But now, like feeding streams of a river, we are getting transportation both north and south of this great thoroughfare, and up these streams the pioneer farmer of British Columbia asks you to come. Come to the older-settled portions if your pocketbooks afford the price of older-settled lands and your spirit longs for good-fellowship near the hospitality of a rich vintage here and there. We would gladly have you see and taste the rich fruits of our many orchards; we know that you would mentally compare them with the mellow fruits of other lands, only to speak aloud the commendation of our luscious apples, peaches, plums and pears. Let us introduce you to our golden grain fields productive of the best that grows in any clime, or we would invite you to the broad stretches of meadow and grazing grounds covered by thousands of horses and cattle, strong and fat and beaten in beauty, thew and sinew never.

But should your pocket not be prepared to own your home where improvements significant of such plenty have been obtained, then come along to our central hinterland, the Lillooet and the Cariboo, where all the possibilities are waiting, and you have only to knock at the door to take possession and build yourselves homes where soon your hands may touch the cornucopia horn and you may bask in the very sunshine of plenty. In the older districts you must pay for more modern transportation facilities and improvements that are, and though you might not guess it yet, the genial, good-natured,

neighborly smile does most assuredly enhance the property. But come to the new land and take a newcomer to become an old neighbor, and you will find the smile will come, though the wearer of it may not be from Erin's Isle, for the wealth surrounding you will bring the laugh.

Come north into the Lillooet, rest at Lillooet town, trek into the Bridge River, and find good fruit land waiting you almost for the taking of it, for it can be obtained at a small sum. Come into the Big Barr country, come into the Little Dog Creek country, come to the Chilcotin, come to the Salmon River, come to the Eastern Fraser, come to the Crooked River, across the vast and magnificent plains to the valley of the Peace.

These are only a few of the many good places where wealth and happiness and contentment are to be found in this Last Great West. The land is waiting to receive many thousands more, and with the spirit of husbandry permeating the many valleys and broad plains, the country will laugh under its treasured load of horses, cattle and sheep, its grain and roots, its orchards and vineyards.

Let me, a farmer by birth and a farmer by choice, send to newcomers of thoroughbred breed to the West a message to come to some one of our beautiful valleys and build homes of peace and plenty under the smile of British Columbia's sunshine.

DON'T LAUGH

AS a memory of the late Eli Perkins, somebody has recalled one of the humorist's surprise stories, and his way of telling it: "I was on a train going east one summer night," he says, "when there was a wreck. The train was derailed and all the passengers were more or less shaken up. Everybody in the sleeping car tried to get out as hurriedly as possible, and in the confusion our clothing got considerably mixed. I had worn a pair of white duck trousers, but I couldn't find them. Finally, I did find a pair of trousers. I put them on quickly, but I couldn't leave the car! You see, they were not men's trousers——" Here there is always general laughter, and Perkins looks about in a pained sort of way, then goes on: "They were boy's trousers."

Some Advice to Intending Immigrants

By W. H. HENDERSON, Associate Secretary of the Vancouver Y.M.C.A.

IT is an interesting spectacle to stand on the platform of the Canadian Pacific Railway station at Vancouver and see the crowds as they arrive at the end of their long journey. The great majority are from the Old Land. They have heard much about the opportunity for young men in this Western Province, and full of hope they have resolved to enter in and possess the land.

We are safe in saying that British Columbia is an undiscovered province. Few have any idea of the wealth that lies hidden in its mountains, or of the fortunes that await those who will turn its valleys into grazing lands and fruit farms. Such a country demands men of mettle—that is, men who can use axe and saw, plow and harrow or wheelbarrow and pick-axe, if need be; men who can adapt themselves to the work in the logging camp or on the railway construction gang.

Of all the Pacific coast cities Vancouver is the most promising to the man who wants work, but at the present time she has little room for men who have been all their lives in the big cities engaged in office work or in the manufacture of textiles. If you are such a man, do not come here, for you will most likely spend weary hours tramping the streets; your stock of money will run out. You will often regret that you left a good place, and you will be the cause of a whole lot of worry to many decent people who are doing their best to help you.

Do you want to learn fruit farming? You cannot address yourself to a nobler profession, and one that offers more substantial returns to one who can pay the price. But let me say to you, do not come to Vancouver, for very little land in this vicinity is given over to fruit-raising. You must make the Kootenay or the Oka-

nagan country your stopping place, and you must be prepared to do a whole lot of hard work clearing the land, planting and caring for the orchard, and then you must patiently wait for the harvest of the husbandman. By the way, let me suggest that you spend a year on a fruit farm in Ontario. There are plenty of them—good ones, too. And the owners are constantly calling for more help. They'll take time to teach you, too. The fruit industry is in its infancy in British Columbia, but it will take more than clerks and office-men to make it pay.

"FARM DAIRYING"

(By Laura Rose)

ONE of the most interesting books which has recently found its way into the editorial sanctum of *The Fruit Magazine* is "Farm Dairying," by Miss Laura Rose, for many years demonstrator and lecturer in dairying at the Ontario Agricultural College.

Miss Rose is a recognized authority on this subject throughout Canada and the Northern States, and this book which presents the dairy industry in a simple, practical manner, will come as a boon to many who have not been favored with an opportunity of cultivating a more intimate acquaintance with the charming personality of the author.

The book is profusely illustrated, not only with beautiful, but instructive engravings, and the subject matter has only to be carefully perused in order to merit the thank and admiration of the reader. The person who owns one cow or one hundred will find it to his profit to forward \$1.50 to Miss Laura Rose, Guelph, Ont., and get a copy of this splendid work.

Views from Old Niagara

BEFORE the reciprocity agreement was announced, buyers of raspberries, strawberries and tomatoes on contracts for the coming season started out to pay prices in the neighborhood of Grimsby equal to those paid on contract last year. As soon as the proposed changes in the tariff were made known the canning factory buyers announced their prices over those of last year, partly owing to local conditions of competition, but chiefly in anticipation of rivalry from United States buyers. This action on the part of the buyers has given many fruit-growers around Grimsby the idea that reciprocity may not be such a bad thing as they thought it was at first.

To show that the canning industries are paying more for certain future crops, and that they are displaying more than usual energy in closing contracts for them, the following statement of business done by Mr. E. D. Todd for the Dominion Cannery's branch factory at Grimsby is given:

Twenty-two thousand bushels of tomatoes at $27\frac{1}{2}$ cents per bushel. (Price last year, 25 cents per bushel).

Four thousand crates of raspberries at \$1.80 per crate, or $7\frac{1}{2}$ cents per box. (Price last year, \$1.68 per crate).

Three thousand crates of strawberries at \$1 per crate, or $4\frac{1}{4}$ cents per box. (Price last year, 96 cents per crate).

One hundred and five tons of butter beans at \$30 per ton. (Price last year, \$30 per ton).

Fully two-thirds of the season's contracts have already been closed by Mr. Todd, and this two-thirds proportion comprises a list of sixty-eight fruit-growers.

The above prices are the same as those being offered by Mr. E. D. Smith's Company, the chief rival to the Dominion Cannery.

As one pushes on farther into the Niagara peninsula, leaving Winona and

Wentworth county to cross over into Lincoln, one notices a moderation of opinion amongst the fruit-growers on the question of reciprocity. The cry against the revision of the tariff is not as decided nor as heated as it was when the deputation went to Ottawa.

There are still many, however, who are unalterably opposed to reciprocity, but even these positivists say that their views are problematical. It may be said, too, that comparatively little objection is made to free trade in anything else than peaches. Peaches seem to be the fruit in which there is the largest outlay, and which in the minds of many has the least chance of competing successfully with the United States. In small fruits, including grapes, and in apples, pears and plums, it is generally conceded that reciprocity would do no harm and many who even in the face of present duties now ship raspberries, cherries, currants and other small produce across the border think that a real benefit will result.

Those who are optimistic amongst the fruit-growers offset the arguments of the pessimist in the free-trade discussion by pointing out: (1) That the assessment of lands has been increased even since reciprocity was proposed. (2) That the quality of the Canadian fruit, especially peaches, cannot be rivalled by any early Southern product from the United States. (3) That it would be better for the Niagara fruit-grower if he could devote all his time to raising the high-grade, high-priced late Crawford peach, and leave the early peach to the United States grower. (4) That the precooling plant, which is to be installed at Hamilton, will enable the grower to compete far more successfully on the western and other distant markets. (5) That the canner is offering higher prices than ever before for small fruits. And (6) That good profits can be made now on many kinds of fruits that are being sold to the United States.

Dr. Buchanan, of Beamsville, president of the Ontario & Western Co-operative Society, took particular pains to deny the report that lands were decreasing in value in this district. He expected that as a result of Mr. E. D. Smith's statement in a Toronto paper much English capital would be shut off for a time from investment here. The doctor said that he was sure reciprocity would hurt the Canadian peach trade. "I used to live in Minnesota, and plums and peaches from Wisconsin never cost more than they do here," said he. "And Duluth dealers now can send any abundance of fruit to Fort William and Port Arthur in the face of the duties." The same was true of the Canadian west. "Montana and Idaho have been trying for years to establish a fruit business," said Dr. Buchanan, "and their crops, which are ready just at the same time as ours, have always been too late for the New York markets. If reciprocal trade is declared Montana and Idaho will be able to pour any amount of their products into Winnipeg."

Mr. C. J. McCallum did not think that Niagara growers would be able to make a cent on peaches in the Buffalo market, where fruit of the finest quality was being sent from New York State, Michigan and Wisconsin. Mr. McCallum said that there were some 400,000 young peach trees from one to four years old in the district between Hamilton and St. Catharines. This number had not borne any fruit yet, and the number of older trees that were giving fruit was between three and four hundred thousand.

Mr. J. Van Dyke said that he owned a large apple orchard and that reciprocity would no doubt benefit him, but that he wished to see the district benefit as a whole.

Mr. H. K. Griffiths thought that reciprocity would help every fruit-grower for the first two years before old trade connections would be entirely broken, because of the extra smaller demands from the United States. But in the end Mr. Griffiths thought that the Americans had peaches enough to swamp the Canadian grower. "Michigan has thousands of acres yet uncultivated that can grow beautiful fruit," said he. "I don't see

where Canada will benefit in any respect by reciprocity and I think the Liberal Government has made a mistake."

Three men disposed to look on the hopeful side of the new trade agreement were found in the office of Mr. P. Falconbridge, manager of the Grimsby Fruit-growers' Society; the other two in the party were Mr. W. J. Drope, secretary of the society, and Mr. R. Lipsit, treasurer.

Mr. Drope said that he was not so violently opposed to the reciprocity agreement now as when it first came out. "Since I have studied it a little I see where it may help us somewhat," he said. "In any case I know that my land has been assessed for \$200 more per acre than it was last year. It was assessed for \$500 last year and is assessed for \$700 per acre this year. Land will always be valuable here owing to the limited amount of it, and it is not true that values are decreasing." Mr. Drope said that he was going to grow black currants this year, as they could be shipped profitably to the United States. "I think the opinion around these parts now is that we are hoping for the best, but we would just as soon have been left alone."

Mr. P. Falconbridge said that four years ago he had shipped hundreds of crates of raspberries to the United States, to Hungerford, Smith Company, Rochester, on the basis of \$3.10 f.o.b. Grimsby. The profit on black currants shipped to the United States last year had been greater than on those sold in Canada. Growers had realized \$1.35 net per basket on the American consignments. Mr. Falconbridge also discounted the idea that land values were endangered. "Mr. Wolverton has just sold an apple orchard to an Ottawa man for \$400 per acre," he said.

Mr. Lipsit was doubtful about the peach trade under reciprocity because of the amount of production in the United States. In other fruits, however, there might be some advantages gained.

Mr. William Mitchell, reeve of Grimsby, manager of the United Empire Bank, and a fruit-grower, said that if the Government went to the country on reciprocity there would not be enough of it

returned to power to move and second the Address from the throne. Mr. Mitchell was opposed to the agreement in every particular, because he didn't think the Americans needed Canadian produce. "The fruit men have worked hard to build up a western market, and they don't want it broken down."

Mr. James Marlowe, at Grimsby Park, said that he was not losing sleep over reciprocity. "Since I have viewed the agreement in a more mature way, I can't see where it will hurt us," said Mr. Marlowe. "It may be just like the San Jose scale that struck us five years ago. We all thought we were going to be ruined beyond recovery, and it proved to be a blessing in disguise, because we learned how to spray and grow the best fruit in the world after that. Reciprocity may help us the same way." Mr. Marlowe said he shipped five cars of red cherries to the United States last year and in the face of the duty realized better prices than he could have obtained here. "I look on the competition in peaches with the United States in this way. Our Crawfords, no matter how late they are in the season, or how many cheaper early varieties have gone before them, always bring the highest prices of the year. Why shouldn't our best fruits find the same high level on the American market and in Canada, too, as they do now, despite the fact that much early Southern fruit might flood the markets in the first of the season?" asked Mr. Marlowe. "I think the man who can't make money in this district ought to go over to the United States."

Dr. W. A. Brownlee said that he was not worrying much over reciprocity. "It would be better for the fruit-grower here if he could grow the late Crawford and St. John peaches altogether, and do away with the early varieties." Dr. Brownlee thought that more harm might have been done by the howl that had already been raised from the fruit-growers than by the reciprocity agreement itself.

A SNAKE STORY

HOW a snake, supposed to be fifteen inches in length, could find its way into a barrel of apples and eat its way in such a manner as to coil its fifteen inches

into one of the apples after the barrel was headed, is a problem which has puzzled Mr. Edward H. Whartman, Dominion fruit inspector of Montreal, Que. Mr. Whartman said nothing like it had ever been brought to his attention during his twenty years in the fruit business.

The snake was of the garter species, and Mr. Whartman says it ate its way in, thus digging its own grave. It was found by Mr. Dan Michael, of Colbourne, Ont., while grading apples from barrels in the packing house of B. H. Coyle & Co., and his solution of the problem is that the snake crawled through a hole in a basket of apples and was emptied, with the apples, into the barrel and shipped.

The time between the heading of the barrel and the discovery of the snake was four months.

The death of the snake probably resulted from too much apple.

APPLES AS AN ASSET

The apple is an asset, financially, morally and politically.

"A little land and a living," is the slogan of the hour.

The apple is the aristocrat of foods and the best medicine.

The climate and conditions that are best for apples are best for man.

Anarchy never gathered fruit from its own apple tree.

Apple orchards are better nurseries for citizenship than the deck of battleships or military camps.

The man in the orchard is always a good citizen.

Horticulture is a science, not a guess.

The twentieth century is to be the age of the apple, and British Columbia is to be part of its empire.

The apple box is Nature's medicine chest.

Rather trust a judge that loves apples than one who hankers after bear meat.

Apples are an antidote for drink and tobacco.

Apples carry the pure food stamps of the great physician.

The road that leads to the orchard is the pathway to a simple, happy, prosperous life.

Words of Cheer

Robert Burns, once invited to a Presbyterian church convention and unable to go, sent the following words of cheer:

Guid friends—

Although not present to your sight,
I gie ye greeting here tonight;
Not claiming to be perfect quite, frae
 taint o' passion,
Yet will I hauld my speech aright in
 good Scotch fashion.
O could some cantie word o' mine
But mak' your careworn faces shine,
Or cause the hearts in grief that pine
 To throb wi' pleasure;
Then wad my cup to auld lang syne
 Fill to its measure.

The gracious powers above us know
How sair a weight of want and woe
Must be the lot of those who go
 Through earth to Heaven;
But aye, the life above will show
 Wherefore 'twas given,
And that guid God who loves us a'
Who sees the chattering sparrows fa'
Will never turn his face awa'
 Though you should stray;
But a' his wanderin' sheep will ca'
 Back to the way.

So muckle are the cares o' men,
That truth at times is hard to ken,
And error to her gruesome den,
 So dark and eerie,
Wiles those who have na' heart to men',
 Puir wanderers weary!
Alack! How mony a luckless wight
Has gane agley in error's might,
Not that he had less love for right
 Than countless ithers—
But that he lacked the keener sight
 Of his guid brithers.

Lo', Calvin, Knox and Luther cry—
"I hae the truth"—"and I"—"and I"—
"Puir sinners, if ye gang agley
 The de'il will ha'e ye!
And then the Lord will stand abye
 And will na' save ye!"
But hoolie, hoolie! Nae sae fast:
When Gabriel shall blaw his blast,
And Heaven and earth awa' have
 passed—
These lang syne saints
Shall find baith de'il and hell at last
 Mere pious feints.

The upright, honest-hearted man,
Who strives to do the best he can,
Need never fear the Church's ban,
 Or hell's damnation.
For God will need na special plan
 For his salvation.
The one who knows our deepest needs
Reeks little how man counts his beads;
For righteousness is not in creeds
 Or solemn faces.
But rather lies in kindly deeds
 And Christian graces.

Tak' tent o' truth and heed this well:
The man who sins makes his ain' hell;
There's nae waurse de'il than himsel'
 But God is strongest!
And when puir human hearts rebel,
 He hauds out longest.
Wi' lovin' kindness will he wait
Till a' the prodigals o' fate
Return unto their fair estate
 And blessings mony;
Nor will he shut the gowden gate
 O' Heaven on ony.

Editorial

BRITISH IMMIGRANTS

THE Dominion and Provincial Governments of Canada are devoting a good deal of energy to promote the influx of settlers from the United States, Great Britain and Ireland and other European countries. This machinery, however, reminds us too much of the old-fashioned pea-thresher that was wide open behind and shot the grain in all directions, involving an enormous amount of labor in subsequent gathering and sifting before being sacked up in a marketable condition. Our governments have been devoting too much attention to jamming immigrants through our portals, and not enough to where they are to land after they have been shot from the rear end of the immigration department. There are thousands of people landing in this country every month who would make the best kind of boosters if things were made a little easier for them to get a start. We must not be surprised that many of them do not know just how best to go about adjusting themselves to new conditions, and if they are often disappointed because they find things, not worse, but different from what they expected, we cannot wonder, because there is much that the advertising literature does not explain to the prospective immigrant, who knows nothing of conditions in a new country. Why should the representatives of the Government and the agents of transportation companies in Great Britain and Ireland be allowed to sell tickets clear through to Vancouver and Victoria to people avowedly looking for employment on the large fruit farms when the latter are mostly located in the interior of the province? Not a week passes that does not bring a number of young men to the office of *The Fruit Magazine* seeking information about where to find employment on fruit farms, and most of these do not have money enough left to take them back to the

Okanagan and other interior valleys, where they should have been sent in the first place without extra cost. Fruit farms are not to be found in large cities, nor usually in their immediate vicinity, and these cities can readily supply the labor necessary to operate the agricultural enterprises in the surrounding country. The city population all over Canada is larger now than it should be in proportion to that of the rural districts. Why could not the various provincial governments establish receiving farms where farm laborers from abroad could get immediate shelter on arrival and subsequent instruction that would fit them for farm work in this country? Their labor could be made to pay the expenses of such a receiving farm, and employers would know where to send for help in advance of their requirements. Then could there be some system about receiving and distributing labor, and some hope of quickly transforming a green immigrant into a useful and contented citizen. While needing help, many farmers and fruit-growers are afraid to hire men who have had no experience in the work of the country, and a properly conducted government farm for instruction in each natural division of the Dominion should prove to be a great blessing to the new-comer seeking employment, and also a great convenience to those requiring his help. In connection with this immigration work on behalf of the governments and the railway and steamship companies there is something "rotten" in more than "the state of Denmark" that needs cleaning up in justice, not only to the immigrant, but to this country, that presents so many splendid opportunities.

* * *

COLORED IMMIGRANTS

IN an interview granted to a representative of the "Vancouver Daily World" on April 17, Col. T. J. Harris, of Sapulpa, Okla., the son of a former

slave owner in Kentucky, is reported as saying:

"Ah'll pilot 5000 niggahs into British-American soil before the summah goes, suh. Ah'll put a niggah and a team of hosses on every quartah section of land I can get my hands on in Alberta, British Columbia or Saskatchewan

"Of course I am not specializing on colored immigrants. I'll make it my business to locate settlers' lands in Alberta, and if those who wish to settle on them are blacks, all right. I expect that our syndicate will place several hundred families in Canada this summer."

"But the bringing of blacks into Canada will develop a racial question here such as you have in the United States," one of the newspapermen suggested.

"Who stahted it?" shot the colonel. "It was the British who first brought slaves into the South, and the British should be held responsible to a degree foah the outcome of the traffic they stahted."

We like the fine flourish of this blustering Southerner, who seems to inherit the instinct of trading in human beings for commercial gain, but if he expects a cordial welcome north of the 49th parallel it would just be as well for him to keep a civil tongue in his head, and not take it for granted that we do not know something of the history of slavery and a few other things ourselves. Canada is more than British, and in all kindness to the colored people of all races whose rights should be fully respected, we beg to inform this gallant colonel that we neither want his negroes nor the Southern "white trash" in Canada. We also disclaim all responsibility for a traffic which never was tolerated on Canadian soil, and we are not the people of whom to ask, "Who started it?" Had it not been for the attitude of the British toward slavery this southern gentleman might have been driving colored people in the cotton fields today, instead of operating the money-making scheme of dumping them into Canada under the pretext of assisting immigration, where conditions are not calculated to benefit the negro in large numbers, or he the country. It is high time that the Govern-

ment of Canada took a more rational view of the immigration question, and clipped the wings of immigration speculators, if this is to remain a white man's country. Let all colors come who are respectable and who seek employment, and do away with the barbarous head tax which the people of this country have to pay indirectly.

But while we claim that every protection and courtesy becoming our claims to a high standard of civilization should be extended to all foreign races sojourning within our borders, we are irrevocably opposed to the deliberate importation of the Oriental or other colored races for any purpose whatsoever.

Speaking from a Canadian point of view, we contend that the full privileges of Canadian citizenship, which carry with them the franchise, should not be granted to any but those of the white races. Nor should the right to hold property be enjoyed by any others, except the native Indians, who were here before us. This would regulate the influx of foreigners better than any method yet adopted and would force desirable immigrants to become Canadian citizens. This country has been pioneered, opened up and developed to the status of a nation by the whites, and we are under no obligation, nor would it seem expedient, to extend the franchise to any race of people who will not become readily absorbed and assimilated by those already owning and governing the country. Moreover, the opportunity is afforded the humblest laborer of becoming the owner of sufficient land from which to earn a comfortable living, and the same opportunity awaits the most obscure clerk of becoming a partner in any of the large commercial concerns of the country. Therefore it would seem to be unwise to systematically import or encourage any class of labor which does not have in it the elements of good citizenship, and for this reason we contend that the best interests of the country, its future peace and well-being, depend on the care with which we select the immigrants who come here ostensibly for the purpose of supplying a want in the labor market, because, although these people (speaking of the

white races only) may not have very exalted ambitions on arrival, their very environment will kindle within them that spark of independence and progress which is a latent element in nearly all of our kith and kin, and it should not be long ere they look forward to having a home of their own and taking an active part in the government of the country.

We do not believe in importing a class of laborers which we covertly regard as belonging to an inferior race and which we would not rejoice to see advancing and improving themselves. We should assume an attitude towards our laboring classes that will blot out the last traces of that tendency of one class to hold another in bondage or slavery.

All labor is honorable and, with our boasted civilization, can only be dignified by providing the possibility of advancement and rising in the scale of human progress.

So far as fruit-growing and agriculture in general are concerned, their future success depends upon intensive scientific cultivation of the soil and the rendering of the relations of employers and employees pleasurable, and throwing the responsibility of the success and progress of the individual upon his own mental capacity and the skill of his own hands.

FAVORITE FICTION

(Chicago "Tribune")

"Yes, I Mailed It on My Way Downstairs, Maria."

"With Sentiments of the Highest Esteem, I Remain, as Ever."

"I Cordially Recommend the Bearer to Your Favorable Consideration."

"Yes, Mr. Sharpe, I Have Formed and Exprest an Opinion in This Case."

"No; That Story is New to Me; Go Ahead and Tell it."

"I'm Glad She Didn't Invite Me to Her Party; I Should Have Had to Go."

"Vote for Slodgers, the People's Choice."

"I Can't Swim a Stroke, Mr. Ketchley; You'll Have to Teach Me."

"Delicious California Peaches."

"Buckwheat Cakes with Maple Molasses, Ten Cents."

"One Day After Date I Promise to Pay."

"You Will Find Our Prices the Cheapest in the City."

"And Now, My Friends, a Word in Conclusion."

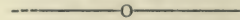
"Yes, I Had an Invitation to the Party, but Couldn't Go."

"Subscription Price, One Dollar a Year, Invariably in Advance."

"Dr. Justout, Physician and Surgeon."

"Your Honor, All My Client Asks in This Case is Justice."

"Twenty Minutes for Refreshments."



WINDS THAT BLOW FROM THE HILLS

O winds that blow from the hills!

I pant for the life in your breath,

For the strength that your presence instils

When the spirit lies sick unto death!

For the rush of your pinions to sweep

The fever of care from my brain—

For your call to the soul's mighty deep,

To rouse her to combat again!

From rock and from fern-hidden pool

That the stars tremble over at dusk,

Bring me your touch tender-cool,

Your love-sigh still fragrant with musk!

I shall live in your kiss on my cheek,

In a draught from the wine of your rills,

In the words only you now may speak,

O winds from the beautiful hills!

Though brief is the last sunset-gold,

And but one wild bird's wing is awhirr

As it did in the days that are told,

My soul at your bidding shall stir:

Shall rise as at clashing of swords,

Whose clang drowns the cry for retreat,

And, in tune with majestic chords,

Set the conquering march of her feet.

To lie in the slumber that kills,

In apathy's dream nevermore!

O winds that blow from the hills!

Be wizards to me as of yore!

Marion Miller Knowles.



MR. HERBERT LISTER

(NOW OF CENTRAL PARK, VANCOUVER, B. C.)

Ex-Government Agent, Commissioner for Slavery, Judge of the British Court, etc.,
Island of Pemba, Zanzibar, Africa.

The Island of Pemba and the Clove Industry

By LASCELLES HASBROUCK

TWENTY-SEVEN miles north of Zanzibar, and about the same distance from the African mainland, lies the great clove-growing island of Pemba. Its coast abounds with bays and narrow inlets, and above the dense greenery of its heights towers everywhere the graceful cocoanut palm. In the not very remote days, when stealing slaves from the mainland was a popular and profitable business, these shelters, once gained, ensured safety to the dhows; anyone attempting pursuit unacquainted with their tortuous currents and shelving reefs was simply courting disaster. The sea is decked with innumerable green isles, where the wild guinea-fowl is at home; and large monkeys utter endless protests whenever man invades their domains. Shells of great beauty and rarity, as well as coral and flower-like sponge growths, are found all around the coast. After leaving the steamer the journey by boat seemed to be by woodland rather than by water, so far had the sea-loving mangrove encroached upon the bay. A number of dhows, with high-peaked ends and cabins thatched with palm leaves, were lying on the mud, waiting for high tide to depart with their cargoes of cloves; and prominent among smaller craft was the "dug-out," hewn, as its name implies, out of solid timber, with outrigger frame, resting on the water.

A MAGNIFICENT VIEW

Chake Chake, the official capital, with its narrow, rough, crooked streets, is the reverse of interesting, but must always be remembered for the magnificent view it commands; lofty girdling shores of vivid green, islands which are veritable emeralds on a sapphire sea, and far-away the hills of Africa, blue and soft as a

summer sky. If the town disappoints, the undulating country beyond amply atones; with its streams and valleys, its banana-shaded huts and villages, its clove plantations and woodlands—everywhere there is beauty, variety and charm.

Pemba, an important part of the Sultan of Zanzibar's dominions, has known Persian and Portuguese rulers, neither of whom has left deep imprints behind; but the Arab, who succeeded them, has stamped his character and influence deeply upon the life of the island. Its importance dates from the introduction of the clove, about one hundred years ago, when, soil and climate proving congenial, its cultivation progressed so rapidly that Pemba soon became a recognized source of clove supply, and now, with Zanzibar, yields seven-eighths of the world's entire product.

Harvest brings with it a sudden transformation in the easy-going life of the island. Of men, women and children, few are too old or too young to be pressed into service. Picking having begun, henceforth until its close you talk, live, breathe, and dream cloves. The yield, price, and supply of pickers become one burning question, to the exclusion of all other topics.

A FIRST VISIT

Whoever forgets his first visit to a clove plantation, when, turning from the blinding glare of the fierce tropical sunshine, he finds the welcome shade of cool, leafy arcades? An exquisite sweetness greets him, in which all the perfumes of Araby are surely blended. Unknown until now, it is yet faintly reminiscent of scents which haunt the memory and touch the imagination. Certain old-time flowers are recalled, but only to



NATIVE VILLAGE, ISLAND OF PEMBA

be dismissed in quick succession; perhaps the carnation—but no, this subtle fragrance is too dainty, too delicate for comparison; it is *sui generis*.

Clove trees, slight, elegant, and many-branched, attain a height of sixty or seventy feet; and so dense is their foliage that only at intervals does a stray sun-beam filter through, to bring light and shadow into play, and change the dark leafage into vivid shimmering green.

The stillness and beauty of those lofty, far-reaching avenues recall the solemnity and grace of Gothic cathedral aisles, and linger in the memory with the same unforgettable charm. At sunset, looking along a darkening glade, you find it framing a circle of gold; gold so manifestly palpable that you have but to hasten onwards to gather up the fairy treasure.

And lastly, walk there under the moonlight, in ebon shade or silver sheen, and you become a veritable pagan. As the night progresses you begin to realize how teeming with life is this equatorial land. A thousand voices, mute by day, awake and swell into a chorus; the myriad many-toned insect pipe blending with the sharp cry of the lemur, the angry chatter of the monkey, and the wailing howl of

the pariah dog, an unfortunate animal which has become such an outcast that he no longer barks.

THE CLOVE TREE

Like all Pemba's trees, excepting that ghost of the woods, the Baobab, the devil's peculiar property, the clove is evergreen, its oval leaves suggesting thornless holly by their smooth, shining surface.

Unlike tree products in general cloves do not succeed the blossom, but are unopened flower buds, resembling honey-suckle in form, passing from palest green through faint shades of pink to rose red. An average stalk bears from eight to fifteen, but crowning bunches often reach double that number. Should they flower the value of the clove is impaired, the cap, which marks the perfect product, falling off in drying. Five months usually intervene between budding and picking, and harvest lasts about three months. One picking generally suffices but, in exceptional years, there is sometimes a second and even a third gathering. Unpicked buds flower and develop largely in size, until they resemble long, slender plums, which, as they are seed-bearing, are known as "Mother of cloves." The ordinary clove being the

undeveloped bud, and consequently immature, will not germinate.

A walk through the avenues when picking has begun gives the impression that a host of invisible Dryades has taken possession; chatter, laughter and song have vanished silence. The picker (clove harvest recognizes no disabilities of sex) climbs a tree, and securing foothold in the clefts of the branches, which grow upwards like those of the poplar, draws the outer end towards him with a hooked stick, and snaps off the bunches which he deposits in a bag. A rope thrown round the boll enables him to swing out and lessens his liability to fall. Small branches and leaves suffer considerably, but this provokes little censure, as it reduces the necessity for pruning. The ground underneath is kept bare save for beds of pineapples which grow wild in abundance. Occasionally there is a coconut palm, Arabs believing that, unless it is planted, cloves will not bear.

THE LABOR QUESTION

Although the labor question grows each year a more serious problem there seems little prospect of the introduction of any aids to hand picking. In slavery days, when the hands on the plantations were largely in excess of the present number, ladders were used as tending to safety, but have been abandoned because they make picking slower and consequently more expensive; and economy in production is a condition of the first importance in clove growing.

Work begins as early as daylight permits and proceeds until a drum sounds at 2 p.m., when the industrial army marches with its spoils to the receiving sheds, where are also the drying grounds—wide, open spaces of hard earth or concrete. Each picker spreads out a mat and proceeds to "stem." A bunch is taken in the palm and a quick contraction of the fingers causes the buds to fall. Stalks are cast aside, but finally sold at one-seventh the price of cloves. On succeeding days the buds, taken under cover at night, are spread out thinly on mats in the sun and stirred at intervals by attendants, who keep a keen eye on the weather, as heavy showers come up quickly, with disastrous results.

In a few hours the delicate hues have faded and in about five days there is the brown clove of commerce. On the tree the perfume of the clove is merely suggested, but with drying its pungency develops rapidly. So intense is it that, when cloves are stored in bulk, it often produces headache.

Deciding when the final stage in drying has been reached requires close attention and discrimination from even experienced testers, although a standing rule usually assists the decision. Should the clove bend without breaking it is not sufficiently dry; if it snaps, it is too dry, and loses value in consequence; but if, while bending, it breaks with a fracture, it is in perfect condition. The cloves are then put in coarse sacks and conveyed on men's heads to the nearest shipping point, whence they are taken in dhows to Zanzibar, to be sold at the Custom House.

THE POSSIBILITIES OF ARTIFICIAL HEAT

As the clove is a product the value of which depends largely on its successful drying, the possibilities of artificial heat being supplied in wet seasons has occupied the attention of growers, but without producing any satisfactory results. Sheds with sliding trays, and also drying under glass, seemed to present some encouraging possibilities, but in both cases the initial expenses and cost of



AT PEMBA, AFRICA

increased labor prevented their adoption. The application of artificial heat is not practicable with the clove owing to its losing strength and consequent value during the operation.

The conditions on which cloves are picked vary considerably. Where the grower has not sufficient help he contracts with a company of pickers for the harvesting of a plantation on equal shares, or will let the picking for a certain sum under supervision, or sometimes he sells the growing crop. While enjoying tolerable immunity from the ravages of insects and blight, the clove is somewhat uncertain as to yield. It is affected by under or excessive rainfall, and a wet harvest largely increases the cost of picking as well as causing deterioration in quality. In bearing it is very variable. A tree which has produced 200 lbs. (a large amount) one year, will probably be barren the next, and in the following may give only a few pounds.

Pemba, during the last few years, has been passing through what threatened to be a crucial period. When, after much temporizing, the fiat went forth that slavery must cease in the Sultan's dominions, the Arab, the landowner and agriculturist of the island, was aghast at the thought of what must follow the extinction of the old and cherished institution. The Swahelies, owing mainly to the degrading influence of slavery, were a steadily diminishing race, and for some time it had been impossible to increase their number by the importation of slaves from the mainland. Of what use was the harvest if there were not hands to gather; and dire were the predictions and dolorous the anticipations when the legal status of slavery was finally abolished. The great clove industry, the mainstay of the island, would be irretrievably ruined, and general bankruptcy would ensue. Pemba depended entirely on her agricultural produce; and in this edict the death-knell of her prosperity was sounded.

THE INDIAN MONEY-LENDER AND HIS INFLUENCE

Happily those dark forebodings have not been realized, and freedom was established, not only without producing friction or outrage, but practically without economic disorganization. Returns



CLOVE TREES, ISLAND OF PEMBA

show that the average in the quantity of cloves picked has increased, and also that the value of plantations has risen. This last, however, may be partly attributed to an advance in price; and it must be admitted that the planters' inability to control labor has resulted in individual and general loss in certain directions. Rice, for instance, once largely grown in low valleys, where the coconut and clove will not flourish, has ceased to be an export. The neglected conditions of some plantations, unpruned and partially picked trees, with rank undergrowth approaching the character of a jungle, also speak of changed circumstances and the steadily increasing size of the mortgagee's hand. The Indian, a shrewd business man, is the money-lender; and when those properties fall into his hands order will come out of chaos. As a general trader he can command the labor of his small debtors in a way impossible to the Arab, who is being financially done to death by high interest.

The act of manumission, while granting a small compensation to the owner, required every slave to apply for his papers; and it says much for the character of the Arabs that the majority of slaves availed themselves very slowly of

the privilege, and indeed their general feeling was that they should be compensated for the loss of their masters! They had never groaned under their yoke, and if they were bound, they hugged their bonds.

Though the freed men did not show themselves averse from earning money by clove picking, as had been predicted, it soon became evident they could not be counted upon throughout the season. Labor, beyond the point of supplying immediate necessities, does not appeal to the Swaheli; it is a shrine at which, at the best, he pays but unwilling homage, and as he was also inadequate in numbers, many plantations for a few years were insufficiently picked.

THE GOVERNMENT AND THE CLOVE INDUSTRY

The Government, which, as it draws a large revenue from the clove industry, is keenly interested in its preservation, seeing the inability of the growers to grapple with the record crop of 1907, sent pickers from Zanzibar, supplemented by drafts from the mainland. This course of action, it is more than evident, will have to be pursued in every bountiful season.

Many mainland pickers had to be inducted into suitable garments before leaving Africa, as, having lived the simple life, they had not attained to the doctrine of clothes, but (and it may be counted as evidence that man is meant to be a clothes-wearing animal) such earnest converts did they become that many returned wearing full pongee suits and high silk hats.

The Government owns many well-managed properties, and an encouraging feature for the future may be found in the increasing number of small, carefully cultivated *shambas*, owned by natives. These small cultivators are mainly Waa Pambas, a native race distinguished in many respects from the Swaheli. They have never been enslaved, or of a certainty not since the days of the Persians, but history is somewhat nebulous about that period. Physically they are finer and handsomer, are country dwellers, and preserve family life, which is held very lightly among the Swaheli; on the other

hand the latter, who are town dwellers by preference, are less primitive and farther removed from barbarism, due to long association with their Arab masters, whose civilization and religion they have to some degree imbibed. The Universities and Friends' Missions are earnestly laboring to introduce Christianity and education, but as yet it is too early to observe or predict results.

THE PRIMEVAL FOREST

No visit to Pemba is satisfying which does not include a trip to the primeval forest in the north of the island. Owing to the humid atmosphere ferns flourish abundantly, covering the trunks of trees; and the seeker after orchids is frequently rewarded by rare specimens of those curious plants. While the rubber tree is not indigenous to Pemba the rubber vine grows freely, and the collecting of its product is a favorite occupation. The gatherer slices off a portion of the bark sufficiently deep to allow of the sap to exude and, after saturating it freely with salt water, proceeds to treat three or four more vines in like fashion. He then returns to the first, by which time, under the effect of the salt, coagulation has taken place to a degree sufficient to admit of the sticky substance being removed. This is made into a ball and sold by weight to agents of the Government.

The island offers few attractions to hunters, although the wild boar of the forest occasionally provides sport with its due concomitant of danger. The wash or wart hog is also followed in his favorite haunts along streams. Noticeable amongst smaller animals is the flying fox or fruit bat, which in head, body, and fur is a diminutive red fox; its wings outspread reach from two to three feet and are supplied with exceedingly strong claws, by means of which he suspends himself head downwards from branches when engaged on his predatory excursions; taken as a whole he would furnish a perfect illustration to a vampire story.

Monkeys may occasionally be seen in a drove of hundreds, but dwelling together in small families seems to be their usual habit of life. The insect world is largely represented, but the island enjoys toler-



SWAHILI NATIVES, EAST AFRICA

able immunity from reptiles, and the few it possesses are, with the exception of the cobra-headed, spitting snake, not poisonous. The natives are amongst the happiest of mortals, taking their pleasures gladly, but nothing in the shape of entertainment approaches the joy of dancing, and almost anything will serve as an occasion for its exercise. There is a great variety of dances, none of which lacks grace and charm, even though at times there is more than a suggestion of savagery in them. In common with many men of the East, the Swaheli can only work when he sings; particularly when there are several engaged in the same task, as in lifting, carrying, or rowing a boat. Not infrequently the songs are Mohammedan prayers, invocations for help, but more often they are simple native rhymes, touching matters of their everyday life.

THE GREAT KING CLOVE

Pemba, though not, broadly speaking, a white man's country, save as the employer and director of native labor, is not unhealthy, and seems to offer good prospects of return for enterprise and capital, both of which will be welcomed and fully protected by a benevolently paternal, but strictly efficient Government. There is

every prospect of the clove grower soon finding his taxes substantially lightened and his returns proportionately increased. The cocoanut and fruit flourish abundantly and offer strong inducements for cultivation. In addition to being the best spot on earth on which to grow cloves it has soil and climate suited to almost any tropical product, and might become the isle of many spices, instead of the home of one. Affairs, however, move slowly near the equator, and it may be long before any rival will have the temerity to question the pre-eminence of her reigning monarch, the great King Clove.

THE RECOIL

A COLLEGE professor who was always ready for a joke was asked by a student one day if he would like a good recipe for catching rabbits. "Why, yes," replied the professor. "What is it?" "Well," said the student, "you crouch down behind a thick stone wall and make a noise like a turnip."

"That may be," said the professor with a twinkle in his eye, "but a better way than that would be for you to go and sit quietly in a bed of cabbage heads and look natural."

Destroying Weeds by Spraying

THE question of how to destroy weeds where it is inconvenient or unprofitable to cultivate, is a question of more than ordinary interest. We are indebted to Mr. A. D. Selby, in the "Toronto Globe," for some valuable information on the subject:

The war on weeds must be incessantly waged. Numerous experiments and demonstrations have been conducted both in Canada and the United States to ascertain the economic efficiency of spraying to destroy weed life. Some useful methods have been worked out. These are suggested for consideration.

Wherever our ordinary culture methods fail us in the control of weeds, the matter of available spray solution presents itself. This use of chemicals as sprays to destroy weeds has heretofore been better developed in the West, with its more limited labor supply and its restricted cropping systems. At present there seems to be little doubt that weed-destroying sprays will find useful application in all parts of the country.

What must be the line of operation or attack in the use of weed-spraying chemicals? These chemicals must destroy the weeds without injury to the crop grown.

Most of our weeds are broad-leaved, or, as we all know, plants with two seed-leaves. Our cereals and grasses are narrow-leaved plants, which produce a single seed leaf. Upon the different reactions of these two classes of plants to the chemical sprays we must depend for our results—for injury to the weeds without harm to the crop. We find that nearly all crops and weeds of the broad-leaved class of plants will be injured by these chemical sprays, and all weeds of the narrow-leaved class will escape injury by the sprays. It follows that crops of the clovers, alfalfa, soy beans, vetches and rape will be killed by such chemicals as destroy broad-leaved weeds, and that the sedges, quack-grass, crab-grass and wild

onion or garlic will not be killed by spraying with such solutions as are not injurious to the grasses, cereal grains, etc. We may hope to destroy such weeds as mustards, dandelion, ox-eye daisy, white-top, thistles, carrot, parsnip, elders, poison ivy, ragweed, cockle-bur, and horse-nettle, as well as practically all other broad-leaved weeds, by use of these sprays. At the same time, these sprays will leave blue-grass, timothy, red-top and other grasses, including the growing cereal grains, such as wheat, oats, rye, etc., without injury if properly adapted in strength and time of application.

Briefly summed up, weed sprays, when properly adapted, should be available for the destruction of the larger portion of our pasture and grain field infesting weeds, when the methods are rightly and economically developed. It would certainly be a travesty on our methods of culture to expect to substitute weed sprays for culture in the growing crop, such as in cornfields and the like.

The most promising spray solutions tested are as follows:

Common salt solution, containing 3lb. of salt to the gallon of water, applied at the rate of 50 to 75 gallons per acre sprayed.

Iron sulphate (copperas) solution containing $1\frac{3}{4}$ to 2 pounds of iron sulphate to the gallon of water (100 pounds iron sulphate to 52 gallons of water). Use at the rate of 50 to 75 gallons per acre.

Calcium chloride solution of same strength as salt and used at the same rate.

Sodium arsenite solution, made from $1\frac{1}{2}$ pounds sodium arsenite in 50 gallons.

Copper sulphate (blue vitriol) solution, containing 8 to 10 pounds of blue vitriol to 50 gallons of water, applied at the rate of 40 to 50 gallons per acre.

Salt has thus far proved the best spray tested for Canada thistle, poison ivy, yarrow and horse-nettle. In the West sodium arsenite is given first rank. Salt is

probably the most effective to destroy dandelion and some other weeds. Iron sulphate is very satisfactory to kill mustard weeds, ragweed, white-top, yarrow, and we believe a great many other broad-leaved weeds. Neither the salt nor the iron sulphate is regarded as offering any risk of application to pastures in which stock is running. Sodium arsenite is a very active poison and rather dangerous for that reason. Calcium chloride has done very well where tested, but appears to be slightly inferior to salt. Copper sulphate solutions may be used in grain fields for mustards especially, but owing to the poisonous nature of the copper sulphate it has a very narrow range of application.

The spray chemicals mentioned are not as a rule expensive.

The chemical solutions used as sprays to kill weeds should be applied, as in all other sprays, by means of suitable spray nozzles which deposit the solution as a fine mist upon the surface of the leaves of the plant. One can use almost any good spray pump which will give good pressure, and direct the spray nozzles after the manner used in orchards and vineyards, or the traction potato sprayers can be so adjusted as to spray the whole area, instead of the row spaces only, thus applying the spray more satisfactorily.

More recently manufacturers have developed special forms of spray machinery in which the force pump is run by traction, as in potato sprayers. A long rod or "boom" is attached to the rear of the sprayer, with nozzles at intervals of eight to twelve inches; the outfit, being thus driven over the grain field or pasture, secures the proper application of the spray. Certain of the weed sprayer manufacturers have developed a "boom" with nozzles which may be attached to any spray outfit. It is believed that these "booms" and some of the special sprayers, which, of course, are fitted with different sized tanks, will be found adapted to use in local or more general tests.

In practice, the time of applying sprays needs to be adjusted to the condition of the growing crop and the relative development of the weeds to be killed. It seems probable that very early spraying

will be less effective than spraying after the weeds have developed a fair supply of leaves. The first spraying should be made not later than the beginning of bloom. Repeated applications need to be made as often as a new supply of leaves is developed, providing the condition of the host crop permits this. In grain fields the best results will be obtained on practically all weeds, when only a single spraying is to be made, by applying the spray just as the crop is ready to occupy the land. With mustard this will find some already in bloom. With ragweed, it is best to spray before the stems of the plants become hardened. With other weeds, of which these two are the type, as well as with these, it is often profitable to make an extra earlier spraying than that designated. For perennial sow thistle, wild lettuce, and orange hawkweed, the spraying in grain fields should precede the blooming of the plants, and in cases of bad infestation with perennial sow thistle or the golden hawkweed two sprayings should be made before the grain occupies the land. It is not clear just what can be done in the handling of bindweeds in grain fields, but similar principles will apply. For spraying in timothy or other grass meadows to kill white-top, yarrow, self-heal, ox-eye daisy and a number of meadow weeds, the principle is similar to that stated for grain fields, namely, to spray thoroughly just before the grass begins heading out.

In spraying pastures to check weeds the maximum returns will usually come from a beginning application in late June or early July, before many weeds are coming in bloom. After the initial application, the spraying should be repeated as often as there is development of new foliage to a marked degree.

In general, better results are obtained from applications made in cloudy weather, although any weather, except that followed by rain, is satisfactory.

The spray applications need to be adapted, more or less, both as to kind and time of application, to the particular weeds present. This was shown in experiments to destroy poison-ivy on fences at Wooster, Ohio. There was very little effect from spraying with iron sulphate,

very good results from spraying with the common salt solution, and the results from calcium chloride were slightly inferior to those from common salt. Where the common salt was used, and two applications were made some three to five weeks apart, the poison-ivy vines were dead the following spring. Similar experiments were carried on at other points, where it was found that iron sulphate would have no effect upon the leaves of horse-nettle, while salt solutions were very satisfactory, destroying the crop of leaves and forcing the plants to put out new leaves. Under these conditions, it may be expected, by two or three successful sprayings, to kill a large share of the weeds in a single season—the more resistant plants being given a repetition of the treatment the next season.

In the case of mustard seeds, very good results have been obtained by the iron sulphate solution, and there is little difference in the results obtained upon timothy meadow weeds in general, such as white-top, yarrow, self-heal and several others, as between the applications of iron sulphate and those of common salt. On the other hand, Canada thistle is not destroyed satisfactorily by iron sulphate solution. It is killed down quite well by the common salt, while some experiments report even better results by the use of sodium arsenite.

Upon ox-eyed daisy we need to have further tests, as well as upon a large number of different plants.

For dandelions the matter is an open question whether iron sulphate solution or the common salt solution is the better for the purpose.

We have yet to learn the best way of handling ox-eye daisy, wild parsnip, ironweed, osier willows, milkweed, velvet-leaf, bladder ketmia, and a large number of other common weeds.

Whoever has no troublesome weeds will have no use for weed-spraying. Whoever has troublesome weeds, through slovenly methods of culture in cultivated crops, such as corn and potatoes, is not likely to be greatly assisted by weed spraying; but grass meadow lands, pastures, roadsides along our highways, along railroads and electric lines, and

such grounds as parks and lawns, are open and offer a very wide field for determining the usefulness and profit of chemical sprays to destroy the weeds in them.

COMMON-SENSE AND HUMANITY

WITHOUT experts it would be a poor world to live in, and a sorry world if we were all experts.

Somehow or another the world doesn't seem to have been designed exclusively for experts.

There is a common knowledge, which, with all its defects, is needed as a check on expert knowledge. An experienced and successful practitioner of medicine will tell you that some of his most valuable professional knowledge has been obtained from his grandmother.

As a rule experts forget the human side of things; that there is a human side in the nursing of the sick, which often is of more service than the medicinal side.

He who tries to order his life entirely by expert directions is simply up against it.

Common-sense and humanity are as much needed as expert knowledge. This is true in fruit-growing as well as everything else.

THE JOLLIER.

"He may not mean just what he says,

But still he wears a smile—

The kind that gladdens up the heart

And that is worth the while.

You've failed; perhaps you know it, too,

Yet he your work will praise,

And when he leaves you, you will find

Your hopes have had a raise."

"The slap he gives you on the back

Says, 'Fine, old boy!' to you.

His little jolly helps a lot

When troubles have you blue.

He may not mean just what he says,

But still he wears a smile;

The jollier—God bless him!—is

A liar that's worth while."

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

THE fruit interests of Canada have figured somewhat prominently in the reciprocity debates in the House of Commons since the issue of the last number of *The Fruit Magazine*. Speakers on both sides of the House have filled Hansard with copious statistics for and against ratification, but when the final votes are taken, ratification is expected to be carried by majorities very little short of the average. There is talk in the corridors of prorogation the third or last week of May, and with that object in view, government business is to be vigorously pushed to a finish after the Easter recess.

A feature of the reciprocity situation that may be worth recalling, so far as fruit interests are concerned, is the opposition to free entry shown south of the line as well as north. Mr. Ralph Smith, Nanaimo, called attention to this in the House in one of his speeches in support of the ratification resolutions. He said the people of Washington, for example, and the representatives of Washington in Congress, are laboring under the same alarmed feeling about the competition of British Columbia against them, as are the people of British Columbia with regard to the competition of the State of Washington. Endless petitions have gone from Washington and Oregon to the Congress of the United States against the bringing of the pact into existence. The fruit-growers on the other side of the line express the fear that the cheaper fruit lands and superior quality of the British Columbia fruit will enter into competition with the fruits of Washington and Oregon. On the question of price of lands, Hon. Wm. E. Humphrey, representative at Washington of the State of Washington, recently said: "But the difference in the quality of the land is not nearly so great as the difference in the price. It is just as certain that the price of land on

either side of the international boundary will come to a common level if there are no barriers between them. The result must be to greatly increase the price of Canadian farm land and largely decrease the price of American farm land."

Reference was made in the House to the apple production of the United States and British Columbia, and a statement, credited to an owner of fruit lands in East Kootenay, whose name was not given, was quoted as follows: "The apple production of the United States within the past fourteen years has decreased about two-thirds. Within this period the population of the United States of America has increased about twenty millions; the apple has become more popular as an article of diet and railway transportation has made its distribution more easy. Concerning British Columbia, apple growers in the adjoining States of Washington and Oregon get equally good or better prices for their apples than the British Columbia growers; their lands are dearer to buy, and the apples consequently dearer to produce. The freight rates are by no means inconsiderable, and there is brisk demand for apples. Consequently there is no inducement to invade British Columbia markets at cut prices. The removal of tariffs by the United States of America on coal, timber, and wheat will immensely develop these industries in British Columbia and the prairies, and create populations of workers needing food, thus increasing the home markets for the British Columbia growers.

"The present United States tariff against apples is 25 cents per bushel, and the Canadian tariff (40 cents per barrel) approximately 13 cents per bushel. At the prices obtained in Canada for first-grade Washington and Oregon apples the protection is only equal to from 7 per cent. to 10 per cent. on value, which, if the growers had any real over-production,



THE SKEENA RIVER VALLEY, B. C.

would not prevent competition with British Columbia fruits, as there is ample margin of profits to cut prices 25 per cent., and still make profits greater than those of most businesses. The tariff, therefore, has not been British Columbia's protection so far as apples are concerned, but the simple factors of supply and demand."

Mr. T. W. Sterling, "one of the most experienced fruit-growers in British Columbia," was also quoted in the House as follows: "The greatest effect that could result from the throwing down of all artificial barriers to trade between British Columbia and the States would be that conditions in British Columbia would be assimilated to those in Washington and Oregon. Consequently values would be similar, and first-class fruit land in the Okanagan would sell at the same price as equally good land does in the Willamette and Yakima valleys, etc. As you know, the price of land in these valleys is higher than it is now in the Okanagan, while our lands enjoy equal natural advantages."

Some information was given as to the cost of day labor, which had been stated at \$1.50 to \$1.75 in the Western States, against \$2.50 in the Kootenays, and Mr. Smith said: "I can only speak on this question with regard to the Pacific coast. The fruit-growers on the coast of British Columbia have always utilized the largest possible amount of Oriental labor in that province for the growing and picking of

fruit. It is very difficult to get the difference in wages of employees in the fruit industry in the Western States and in British Columbia, and to calculate what that difference amounts to; but so far as the coast is concerned, every kind of available cheap labor has been utilized, Orientals have been utilized by the coast fruit-growers to the largest possible extent. I have a suspicion that if they have not Oriental labor in the Okanagan and in the Kootenays it is because they cannot get it. At the present time there is some difficulty in getting all of this class of labor that is necessary on account of the development of railway construction, which is so extensive in that province. That is a question which will right itself

"The superior quality of the British Columbia fruit lands ought to stand for something. When the reports of the Agricultural Department of the Province speak so strongly upon the difference, surely with superior fruit and superior advantages and superior lands the fruit-growers of British Columbia ought to be able in their own market to compete with the fruit-growers in the Western States."

Mr. W. A. MacKinnon, Canadian Trade Commissioner at Birmingham, in a report to the Department of Trade and Commerce here, writes as follows on the subject of Canadian cider for British markets: "In this present year of scarcity there is a greater demand than usual for Canadian and United States cider. The

supply from Canada has been limited owing to the small crop of apples and the greater portion retailed for consumption as fruit. Inquiries are therefore being made for fresh sources of supply. In connection with these inquiries it is worth while pointing out that while in the south of England the superiority of local-made cider is strongly asserted, there is in the Midlands considerable demand for the imported cider. It is claimed that owing to the greater sunshine prevailing during the ripening season, Canadian apples yield a finer article than can be obtained even from the best of English varieties."

Mr. J. A. Ruddick, Canadian Dairy and Cold Storage Commissioner, gives the following information in the Census and Statistics Monthly: "There will be held during the year, under the auspices of this branch, a third Dominion Conference of Fruit-growers, when questions affecting the fruit-growing industry from a national point of view will be discussed. A beginning has been made towards co-operation among the fruit-growers in the Province of Quebec. There is a great opportunity to improve the apple trade in that Province. There are many fine old orchards, that include a large proportion of trees of some of the finest dessert apples in the world, which are almost non-productive through neglect. The renovation of these orchards and the proper handling and marketing of the crop would, under present conditions, yield a handsome return to the owners.

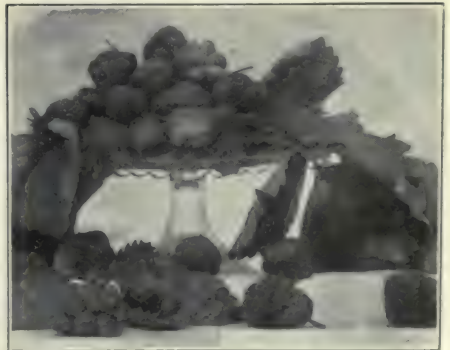
"This branch shipped 1,209 boxes of apples, 113 boxes of cheese and 25 boxes of butter to London for the Festival of the Empire exhibition. The apples, which were selected and packed by members of my staff last fall, and have since been held in cold storage, were a particularly fine lot, and were in first-class condition for shipment. Spies, Baldwins and Ben Davis comprised the bulk of the shipment, with a fair representation of Canada Red, Wagners, Kings, etc. One carload was obtained in British Columbia, while the balance was secured in the Eastern Provinces."

The manager of a Bristol, Eng., firm of fruit dealers has written to Mr. E. D. Arnaud, Canadian Trade Commissioner at Bristol, as follows: "We are surprised

that shippers have not taken more advantage of this market for Canadian apples, in view of the fact that up till now it has not been supplied direct, buyers having to fill their requirements from the neighboring markets of Liverpool, London and Cardiff. The fast line of steamers now running between Canada and Avonmouth (which ensures the fruit arriving in splendid condition) we consider a good opportunity for shipments of apples to be landed here in good order. We have practically had no quantity of direct apples here, and what have arrived have been poor specimens, consequently the results have been far from satisfactory. Any reliable parcels have brought full values, and we can only reiterate that shippers might do worse than send their consignments to Bristol for sale. At the present moment apples are realizing very high prices according to quality and condition, 22s. to 24s. having been obtained for good sound No. 1 Baldwins and Ben Davis, whilst Golden Russets are realizing 30s. to 38s. We understand that the first arrival of Tasmanian apples is due in London about the 1st of April, so that the trade for Canadians is practically now over."

—o— QUITE NEW!

This may be of service to readers who have small gardens. In April or early in May set forty potatoes; in twenty put a bean in each, and in the other twenty a pea. You will have a good crop of peas and beans, and the potatoes will be free from disease, with an average of thirty tubers.



STRAWBERRIES GROWN AT HAZELTON, B. C.



SKEENA RIVER AT HAZELTON, B. C.

Interesting Extracts from an Address Delivered on March 24

By CHAS. F. ROLAND, Commissioner for Winnipeg, Before a Convention of Delegates at Dauphin, Manitoba.

IN the advertising of a community, whether it be a federal or provincial, a city, a town or district, there are three things that make for success, and these are: First, organization; second, funds; third, management. I think you will agree with me when I say that community advertising is a big business. Federal, provincial and municipal executives in Canada and the United States are all out to improve along agricultural, commercial and industrial lines, and every effort is coupled with the expenditure of large sums for advertising.

Figures compiled by a central bureau show that in 1910 \$7,500,000 was expended by cities and districts in the United States alone. Last year the Dominion Government appropriation was \$900,000, and for this year \$1,150,000 are the figures in the preliminary estimates. The several provincial appropriations this year for immigration and advertising will exceed half a million dollars, and that will be supplemented by even a greater

sum by the three Canadian transcontinental railway systems.

"Canadian cities and towns will add to the publicity fund for advertising this year another quarter million, which makes a probable total of \$2,350,000 for community advertising for the year 1911.

ADVERTISING A NECESSARY THING

"The question arises, Is it necessary, is it business, that such a sum be invested in the general advertising of our resources and possibilities? The answer is Yes. Wipe that appropriation for federal, provincial and municipal advertising off the slate to-day, and where would Canada stand in the eyes of the nations of the world?

"It is as absolutely necessary for any community that would be great to maintain its merits before the public with a thoroughly organized system, as for any big commercial enterprise to invest in advertising space to profitably market their merchandise. People can be drawn into a country, a province, a city or a district in

the same manner as we see so effectively employed in drawing them into a store.

"That community advertising has proved effective is easily shown by the cities, towns and districts in Western Canada that have organized for that purpose. Regina, Calgary, Lethbridge, Saskatoon, Camrose, Edmonton, Prince Albert, Brandon, the City of Winnipeg and others are living testimonials of results of community advertising.

"Four years ago we formed in Winnipeg an official institution, under the name of the Winnipeg Development and Industrial Bureau. Without going into details, it may be interesting to you to know what our bureau in Winnipeg has done and is doing along this line. We started out with representatives of several business bodies, headed by the City Council, Board of Trade, Bankers' Association, Manufacturers' Association, Real Estate Exchange, Builders' Exchange and three other public bodies. We have to-day what we believe to be a perfect organization. We have now thirty-eight representatives of eighteen business bodies on the board of directors, having 8,700 affiliated members, 425 of whom are business firms, who contribute to our financial requirements. These firms pay annual membership fees of \$20.00, and every year they appoint a delegation to wait upon the City Council and ask for a sum they deem to be essential, outside of members' contributions, to carry on the work for the current year. That the city fathers appreciate the work we are doing is shown by the fact that in 1906 the city grant was \$1,500; in 1907 it was \$3,000; in 1908, \$6,000; in 1909, \$10,000; and in 1910, \$25,000. During the past four years we have handled 68,000 enquiries for information about Winnipeg and Western Canada. In answering these we have sent out in that time as many letters, and have distributed over 2,000,000 pieces of printed matter, including every size, from a four-page pamphlet up to a 100-page highly illustrated book. Important in our work has been the supplying of over 1,000,000 lines of news matter about Winnipeg and the West to magazines, newspapers and other publications in the British Isles, Eastern Canada and the United States. With this matter sent out

we have furnished over 2,000 photographs for illustrations. This four years' campaign has cost Winnipeg \$61,315, and we have every reason to believe that the money has been well invested. It is not the policy of the bureau I represent to take credit for the development that has taken place since it was established, but we are proud to publish statistics that show increases in the past four years that are unequalled by any city on the continent. Our assessment values have jumped from \$80,511,000 in 1906 to \$157,608,000 in 1910; our bank clearings have risen from \$504,585,000 to \$933,415,000. We have erected in the past four years \$48,777,000 worth of new buildings within our city limits, and our population has increased from 122,000 to 175,000, and we have added over seventy new manufacturing plants, which have increased our annual manufactured output from \$18,000,000 in 1906 to \$36,600,000 in 1910.

"Getting back to our general subject again, I might say that to-day there is probably not a town of any importance—surely none with ambition—that has not a live Board of Trade and a publicity organization. As I have pointed out, the railway companies, the federal and provincial governments believe in advertising and are to-day doing a great work for Western Canada.

"The same might be said of Winnipeg, for we do not confine our paid advertisements nor our printed matter solely to Winnipeg. We must show the manufacturer, the investor or the business man what is behind the city, and in so doing it is necessary to devote considerable space and work to the compiling of general statistics relating not only to Manitoba, but to Western Canada as a whole.

"In replying to enquiries regarding the agricultural resources, we cannot and do not discriminate between any outside districts. Here is the real basis and reason for community advertising—here is positive proof that cities, towns and districts should direct attention to their special advantages.

"The work of the railways, of the governments and of the City of Winnipeg, and the work of advertising any district, all work hand in hand. Without the former you could get little results, but with



APPLES GROWING AT HAZELTON, B. C., NORTH OF THE FIFTY-FIFTH DEGREE
OF NORTH LATITUDE

this great combination, pulling men, money and brains into the country, cities have an opportunity of getting results at a minimum cost.

"Now, your chairman has asked me to suggest a plan for a publicity campaign for Dauphin and district, and in this connection I would recommend the following:

"(1) The basis for an annual expenditure should be at least \$10,000.

"(2) The appointing of a man as secretary who has the capability and strictability to carry out a progressive campaign.

"(3) Organization: "The Dauphin District Board of Trade to include the municipalities of the town of Dauphin, Shellmouth, Ochre River, Shell River, Bouldon, Grandview, Gilbert Plains, Ethelbert, Mossy River, Swan River and Minitonas.

"(4) Objects: To compile, record and publish statistics and literature respecting the town and district; to promote the agricultural, industrial and commercial interests of the Dauphin district.

"To make public by advertising and through the circulation of literature by your members the opportunities for investment of money, in agriculture and other openings in this district.

"It may be that you are over-modest and think you have nothing to advertise.

From my knowledge of this district I would say that you have greater possibilities than any section in the Province of Manitoba, bar none, for investment in lands, for population and for certain classes of industry. In this Northwestern section of Manitoba, which includes twenty-seven municipalities, you have an area of 4,157,545 acres, and in this great inland empire, of which the Dauphin district is the capital, you have a population of but 39,869. Of this population there are 9,329 resident farmers. You have under cultivation 893,800 acres, which produced last year seven and a half million bushels of wheat, twenty million bushels of oats and three million bushels of barley. Your average yield was 25 per cent. greater than any other section in the Province last year. Suppose that your unoccupied lands were under cultivation—based upon your agricultural statistics your population would be approximately 160,000, and your crop yields would exceed 125 million bushels annually; your present total assessment valuation in this district is \$24,493,550. If you would contribute only half a mill on the dollar on this assessed value you would have a Board of Trade fund of \$12,500 a year. To have a perfect organization there must be more than moral support. You have got to provide a sum to supplement

your energies. That fund should naturally arise by taxation from the whole community, who are benefited; but in many cases it starts by individual contributions among the most representative and public-spirited men in the community. Your lands are now selling at an average of about \$30 per acre. Is there a man—a farmer present, who will deny me when I say that if a statement of your crop-producing lands were properly and intelligently advertised to the world, but what the values would rise at least \$10.00 per acre within the first year? If you can raise the price of only what is now under cultivation \$5.00 per acre, you will be \$82,000 ahead the first year after you spend your \$10,000.

"Under management comes the man behind the gun. This man has simply got to make good to successfully handle a campaign of this kind. He must be a thoroughly good organizer, a past-master as a press agent, and in this connection his newspaper experience will help him a lot. As a promoter, he will find something doing all the time; and last, but most important, he must be a successful man on design and copy. How to create a home-spirit; to kindle it, and keep it alive and to smoulder out the pessimist, are points that test his ability as a manager.

"System in handling the daily correspondence so as to properly classify and key and follow up all enquiries is a requisite.

"This man should be under salary—well paid in fact—in order that the responsibilities for success shall rest upon him and find warrant for doing so in the pay he gets.

"Persistent effort must also be made to secure a better combination of business interests on the part of local firms in order to keep money in circulation at home.

"Your office must also be equipped to perform the functions of a free information bureau, open to all visitors and citizens, where information calculated to be useful to business men can be found tabulated and filed.

"Convention delegates and the more important visitors to the city should be subjects of tactful and untiring attention on the part of the manager and commit-

tees in charge, and tours of the district should be organized on their behalf.

HOW TO ADVERTISE

"Booklets and pamphlets concerning your community should be profusely illustrated, the subjects carefully chosen and a new standard set by which you will achieve a high reputation for cleverness and taste in your advertisements.

"Let your souvenirs and printed matter go directly into interested hands. There is one way to get par value for the literature you send out, and that is to advertise in newspapers and magazines for the people you wish to reach. You may employ agencies other than those you reach by direct advertising, but let them be side issues and not interrupt the general campaign.

"We have in Winnipeg met with good success in interesting our school children in the work. In one day last summer, through our public schools, we distributed 45,000 pieces of literature. The actual attendance that day was 11,250 pupils. We delivered to each school a sufficient number of large open envelopes in which were enclosed four different pamphlets. In every pamphlet and every book sent out we enclosed an unstamped return postal card, offering to put the recipient on our mailing list to receive all advertising matter issued in the next 365 days.

"I am glad to know that this year there is a wave of sentiment sweeping across this province to make better known the unlimited opportunities offered to settlers and investors."

In a small town in North Dakota a telephone system was recently installed and the novelty of the thing soon spread to the surrounding district. One ambitious young farmer, who had been shown through the central office and incidentally introduced to the bewitching young lady who presides over that establishment, after a careful study of the rule book ventured to get into communication with the queen of the magic wires. Ringing the bell long enough to alarm the settlement and applying the receiver to his ear, he was mortified to hear a man's voice enquire, "What do you want?" to which he meekly replied, "I want the middle."

Amateur Fruit-growing in the Willamette Valley

By JOHN F. FORBIS

THE SAME APPLIES IN BRITISH COLUMBIA

EIGHT years ago I had not even reached the dignity of being an amateur in fruit-growing. It is certain no greater or higher degree of proficiency than amateurship has at the present time been attained, and with the progress that has been made I can see no reasonable probability of graduating from that class. In fact, viewed both forward and backward, the movement would seem to have been retrograde. I was sure at first that I knew something about the business in which I was engaging. I am certain I know less now than I thought I knew then. Practical observation and operation must, however, add something to one's proficiency, albeit the extent of the progress is uncertain and not easily defined. When your president commanded my services in this behalf, I obeyed with a concealed purpose of propounding to this society many of the unsolved problems which have vexed me, and asking for its aid in their solution. But more mature consideration convinced me that course would be unfair; first, because of the undue length of the paper required, and second, because it would convert your meeting into a kindergarten should you be good enough to attempt my enlightenment.

The lapse of time has not been sufficient to permit of a discussion of any, or scarcely any, of the experiments which I have made. In fact, I find that most of what I thought were original experiments have been proved or disproved long ago. If I am to have any successes they are not yet due. My failures, and they have been many, with a little more knowledge might have been avoided, and I am sure would not interest you.

In all my experience I know of but one that I feel would be of interest to this society, and that not because of any original research on my part, but because of a most salutary effect produced in following out instructions from the Agricultural College.

When my apple orchard was four years old I was startled to find quite a number of the trees seriously afflicted. I appealed at once to Professor Cordley, who promptly diagnosed the disease as apple anthracnose. I believe it is also called "black spot" or "dead spot." The afflicted trees were quite frequent and some of the smaller ones practically destroyed, although all of them have sent up shoots from below the injury which promise to make good, and but little if any in arrears of their unafflicted sisters. Professor Cordley advised a fall Bordeaux spray, which I applied as directed, and which I again applied the succeeding fall. Since the first application I have never found a trace of anthracnose in my orchard. Under the same director I substituted lime-sulphur for Bordeaux this fall. As to its efficacy, of course, I cannot yet speak. However satisfactory it may be, its results with me cannot be so certain and convincing, for it can at best only prove preventive. It has the advantage of clean trees to begin with.

I am engaged not only in fruit-growing, but in diversified farming, and I must confess that my solicitude over the question of raising trees and crops has become secondary to the greater and more important one of disposing of the products at such a profit as will justify the venture. It is to be hoped that a favorable solution of this problem may be

found, and that such a solution actually exists beyond the eye reach of the amateur. However, it has not yet presented itself, and at the risk of being called or thought pessimistic, I propose to lay before you some of my views on the subject.

Mankind has never come to realize what it owes to him who produces from the soil. In this day of increased cost of living—which I dare predict is to continue in a generally advancing scale, indefinitely, with such recessions as always accompany all forward movements—in this day, I say, the demand and the only demand of the consumer is that the food producer go back to his servitude of supplying by his unpaid toil the necessities of life. Against all the other elements of trade and commerce the consumer knows the futility of his battling. All of these are firmly outreached behind fixed charges that cannot be compromised or scaled. Who, then, can recede but the producer? Railroads have their interest to pay on bonds and dividends on stocks, how or when contracted or issued is not now an open question. It isn't permissible to suggest that they take less than a fair return upon investments. Manufacturers must likewise be recompensed, not only upon the original investment, but upon all profits that have been reinvested, though the molehill has grown into the mountain. No one can be heard to complain at this common demand. Capital must be compensated for its use, and scorns the idea that any part of its constant increase may be abated. On the contrary, its exactions increase when financial conditions grow worse. To all this we must if we would be called reasonable accede. The commission or middle man must be able to pay his unceasing rent and help and must be permitted a living. He would be unreasonable who would deny this. The rent of lands and the toll of mines but compensate the owner for the value of the use and the exhaustion of the estate, notwithstanding it is human industry and activity that make the value, thus loading upon the producer a tax automatically increasing with its production—a weight growing heavier the higher it is lifted—an intolerable pressure on all industry which can only be relaxed by a recession of prosperity. And so on with

each and every component part of the social structure except the laborer and the land tilling producer. These, and these only, are the compressible elements in the towering pile.

Whoever heard of a measure of profits to the farmer? Is the price of his products ever fixed with reference to the amount of his investments or the cost of his production? Is he ever permitted to say, I cannot produce for the price you offer? No; chained to his task he goes on producing and yielding, and then when the harvest is gathered, accepting not what he may reasonably ask but what may unreasonably be offered. His patience, his resignation, his ceaseless labor, his privations, his uncomplaining steadfastness in the performance of his tasks, gives to his calling the semblance of the weary and overworked mother, giving to her offspring without complaint and without question the very last vestige of her impoverished and unsustained strength. The likeness is further completed in the consumer, who, pampered, spoiled and exacting, demands and takes as his right all she can provide, even though it should deprive her of the capacity of yielding more—ay, of her very life.

So now when he who dwells in the city finds the cost of living high, he sees it only in the food he eats. He knows the futility of asking the merchant to reduce his profits, or the railroad its rates, or the bank its interest, or the landlord his rents. On the contrary he stands fearful lest all these be increased. But he knows there is one patient and long-suffering being who has never yet struck or balked, and who yields the raiment and the milk of existence, and has never yet been either well clothed or fed. He can take less and he will. And really he can afford to, for in the height of his prosperity he has never had enough to whet his greed or to realize the comforts of life. Comparatively and really his loss is nominal. I refer to the farmers as a class and not to the few, the very few, prosperous individuals.

With the average yield of land, and it is with averages we must always deal, it is not difficult to understand how poorly the farmer is paid. The world exclaims at dollar wheat, deplores the hardship to

the consumer, and imagines the rich farmer. Did you ever observe that dollar wheat generally occurs after the farmer has sold last year's crop and before he has gathered this one? But, admitting that he gets the dollar, and give him 20 acres of land yielding 25 bushels per acre: he would be at the end of the year the recipient of the munificent sum of \$500, all his own, and for which he had only given one year's services and the expense of help, taxes and general upkeep and the use of the land, which, by the way, rapidly deteriorates.

Perhaps some one may suggest that the farmer should go into dairying and not devote his farm to wheat. With this suggestion I quite agree. But cows, and especially good ones, are high-priced, if they can be obtained at all. Stables are expensive to build, and it is astonishing how much a cow will eat in a year. But all these difficulties we will overcome, and equip him out of our generous imagination and set him to work without debt and with plenty of courage. We will give him ten cows, and good ones, too, while we are about it, for we are going to have them yield \$100 each per year, which is the average theoretical high mark. The land must be well tilled to sustain this herd and increase and other necessary farm animals. But he will have the advantage of perennial fertility if well handled. It must be remembered though that the labor on the farm has been greatly increased and that more help will be required and more general expense necessary—all dependent on the man in charge and other conditions. There is only one certainty, and that is the maximum gross income will not exceed \$1000 per year. The net will probably not exceed one-half that amount in theory. In practice it never will. The farmer, then, with an equipment better than the average will receive not greatly, if any, more than the average laborer. His advantage lies in the fact of his independence, his permanency, the increase in his herd and a scant part of his own products. But we must not consider his investment, for that we donated to him, and he is too good a citizen to think of realizing profits on a gift.

It may be admitted that there are men

who with such a beginning would soon own all the adjoining farms. These are always pointed to by the social moralist as examples of what true thrift will do. But this character of thrift does not come from one who only follows his calling, but from a speculative faculty, which but few men possess.

Do I hear the suggestion that the farmer should have more land and more cows? The proposal is not tenable. From a strictly farmer's standpoint he realizes the greatest profits who, as nearly as possible, confines his operations to his individual efforts. To exemplify: I confidently assert that, with the present high price of dairy products, given the land, the stock and the equipment, all average, no man can conduct a decently clean and up-to-date dairy, hiring all the labor for its conduct, and realize a profit from the sale of dairy products. In other words, his investment will not earn him anything, except the increase in his herd. If he can establish a fancy market, or has land of exceptional dairy character, better results may be obtained.

I do not say that he who follows dairying, unremittingly, intelligently and with strict economy may not in a measure be successful. But how poor are its returns considering its demands and as compared with other businesses that might be reasonably called profitable. What product, save that of the farmer, could be found continuously in the market under the same conditions? How much coal or iron, or oil, or land, or copper or timber, all Nature's free gifts, would be offered in the marts were there not some unearned royalty or toll accruing to the owner of the lands?

Why does this condition exist as to the farmer? Because any one can and every one may farm. Here is a calling capable of scientific development, yet nature bestows her gifts, meagre perhaps, on every one of her devotees, rewarding each according to his deserts. Nature cannot be too niggardly or discriminating, lest her children perish. And so she pours forth bountifully, and leaves it to man to adjust his own affairs. And man has adjusted them by taking everything away from the farmer but the toil. Combination, man's latest and wisest development,

governs and adjusts every calling and business save only the farmer. What man, what movement, what force is going to be big enough to call this mother of all industries from her grovelling toil and teach her the simple lesson?

When I say I think I can foresee a gradually increasing cost of living, I base the opinion upon the reasonable assumption that farmers, as reasonable men, must exact something from what they produce, and that if it be denied him he will refuse to produce and continue to drift to the city as he has been doing, until the farm products exact their values from the mere fact of undersupply. Then may be realized that consummation, devoutly to be wished, "back to the farm." And then may we hope that he will bring with him a purpose and determination for better results.

But why doesn't this exhibit farmer of ours resort to fruit-growing? That brings us to the purpose of this whole discussion, and as a preface let me say that if what has been said has at all impressed you with the deplorable condition of the farmer, then I ask you to apply it, as a prophetic vision of the possible—I had almost said the probable future of horticulture. I know this is not a pleasant view nor is it a pleasant duty which compels the expounding of the truth. But to me it is a truth that every day grows more painfully evident. To the legitimate orchardist the teaching will be a benefit and not a detriment.

The trite saying that history repeats itself is but in effect the statement that like conditions will produce like results. In support, therefore, of the position assumed on this subject it is only necessary to observe what has been the outcome of all booms, horticultural and otherwise. From alluring profits to disastrous losses, in a few years, has been the history of overstimulation, may I say drunkenness, of every horticultural excitement. Witness the orange and the lemon crazes, and the prune boom, all of but recent memory—wild speculations, all of them ending in utter rout and confusion, not because the business was illegitimate, for these industries have come back, or are gradually coming back to proper and sensible dimensions and conditions.

Will the apple industry escape the disastrous reaction—prostration—which must result from all overintoxication? I fear not; in fact, I am sure it cannot. Already the signs of overproduction are becoming manifest, and this before one-third, I should judge, of the planted orchards in this northwest country have come into bearing. Probably the word overproduction does not properly define the condition just now. Perhaps it would be better to say that a riotous and unanticipated flood of this delicious fruit has swept over and choked the gates of demand and put the industry at the mercy of the consumer. Had the present supply been held in check and distributed as required, the supply would not have proven excessive. But uncontrolled, the supply seems overdone, resulting in discouragement, which may at any moment develop into panic, if not this year, then some other year.

The apple tree is undoubtedly the most vigorous and productive fruit tree known. It is adaptable to nearly all the lands of the northwest region. Planted under ordinary conditions, nearly all the trees set will come into maturity (unless irrigation is necessary) with or without cultivation, and will continue to bear fruit beyond the lifetime of him who plants them. The ground suitable to apple-raising is practically unlimited. No doubt some localities may raise good fruit with proper care. Under like conditions the orchard run of fruit will not differ greatly in the various localities. With the common consumer there would be little choice. If certain localities claim this is an unfair statement, I have no objections to amending it to conform to that opinion, and would then simply say that good fruit, good enough for any one not overfastidious, can be grown generally throughout Washington, Oregon, Idaho and parts of Montana—such fruit as will satisfy in quality any reasonable market demand, and such as when supplied will leave no great demand for a superior quality.

Not only is the area of the apple lands unlimited, but the yield is practically so. It is a fact that on every acre of this land in proper cultivation, at maturity of the trees, a carload of apples, or 15 tons, can be produced annually. This is a minimum.

Many, if not most, of these acres will produce two carloads per year. Making allowance for off years of production, a carload per acre per annum is not far from the fact. There are very few products of the soil which are yielded so bountifully and so regularly. It is well worth the attention of the experiment stations to ascertain the food value of this product for stock, if the tests have not already been made. If satisfactory results can be obtained, it would be difficult to imagine any crop yielding a greater return. Excluding kale and some of the root crops, and possibly green cut alfalfa, I know of no crop comparable with apples in yield per acre. During the present year thousands of tons of apples are rotting beneath the trees in the Willamette Valley. I have reverted to these facts to show how ill-considered is the claim that it will be impossible to overproduce apples.

In horticulture, as in agriculture, the law of supply and demand is self-adjusting. If there is a profit in growing anything there will be land and men and money supplied to grow it, and the more inviting the prospects the more will be supplied. There can be but one preventive against overproduction, and that is the absence of conditions producing it. In other words, monopoly only is uncrowded. That there can be monopoly in apple production is not worth consideration.

I have no statistics on the acreage of apples planted in the northwest country. I know it is very great and is growing by leaps and bounds. I do not know, but I believe that only a small proportion of these orchards have yet begun to bear. However, upon the basis of a carload of fruit to the acre make your own calculations, in your own small community and determine how many trainloads of apples you can supply. Or go to Hood River Valley—that gem of the mountains, of how many acres I cannot ever guess—and find there a solid block of trees from rim to rim. When these shall all come into bearing you will probably cease to estimate trainloads as a unit, and begin to wonder how many railroads it will require to move the crop. And still you have the whole of the great area of Oregon with apple orchards everywhere,

which you have not yet considered. The end is not yet, for you must multiply Oregon's product several times, I don't know how many, to find the yield of the State of Washington, and still Idaho, Montana and British Columbia have not been considered. Nor must we lose sight of the fact that our apples go to supply only the fancy trade and excess demand, over and above what the other parts of the United States itself supplies, which, until the last few years, has been all-sufficient.

We are just beginning to meet or overtake the evil effects of many years of exaggeration, over-estimation and booming. With reports of enormous yields, high prices and fortune-building incomes, there could be but one result, and that a mad and overwhelming rush, abnormally and suddenly expanding the area of apple orchards and surfeiting the market with a perfection of fruit, such as was never before seen. The production must necessarily continue to increase for many years as young orchards come into bearing.

It is said that not one-half of the trees planted will come into bearing. It may be that not one-half or even one-fourth of them will have the requisite care for yielding marketable fruit, but if other regions are like the Willamette Valley, practically every tree, regardless of care, will yield fruit indefinitely, unless the axe be laid at its roots. For in this valley the apple tree grows and thrives by the roadside and asks no favors in the jungle. The only co-operative forces the orchardist has here in reducing the supply are anthracnose and codlin moth; possibly San Jose scale and scab will have to be reckoned with. I have never seen the former here, and but rarely the latter, although I have been told that both exist.

A few years since it would have been useless, as it may be now, to warn the fruit-growers of the dangers of over-exploiting the wonderful character of the northwestern climate and fruit lands. Many of them were, and still are, actuated by a very natural and laudable local pride. These still hold their pride and their orchards and are the backbone and heart of the calling. But others have exaggerated beyond the wonderful results, that required no exaggeration. This

was advertising. These men were not in it as a legitimate part of the business, and if you will look around you will discover, I think, that most of them have shown their confidence in their profession and claims by selling out to their friends and patrons.

It is not the orchardist who goes into the business for the love of it and as a means of livelihood who is a menace. It is not conceivable that there could be too many of such. Every neighborhood would gladly welcome one so inclined. The trouble arises through the promoter, who not only increases the product but fills up the occupation with those gullible, perhaps well-meaning but unfit people, who are led into the belief that an apple orchard is a veritable garden of Eden, where man has no wants that are not supplied without care. To these again history will repeat itself. In the fruit of the apple tree they will find knowledge, and I fear will be turned from their Eden to begin anew earning their bread by the sweat of the brow.

I do not think that anyone here can be more interested in the matters I have been discussing than I am. This should give assurance that I have no purpose to injure our common business. For many years I have believed that prevailing conditions would inevitably produce disaster. But I believe there is a remedy, not one that can produce or maintain high prices or give to the orchardist excessive income or great wealth, but one that will yield to him a fair and only a fair profit on his investment and labor. Such a measure of success is ideal. It insures a steady and normal condition for the industry, as the governor insures a uniform and steady speed for its engine. It prevents overexpansion and yet insures a steady growth. I can, of course, refer to but one remedy, and that is union and organization.

The present local organizations are not only desirable but necessary. In each district such an organization should be formed if none now exists, and to these local organizations I believe in adding a function which, so far as I know, none of them exercise. This should be a bureau of information, willing and ready to advise all intending purchasers of land or

orchards. The information should be conservative, founded upon actual experience, as, for instance, as to the actual cost of maintaining an orchard and its average yield, also as to the price obtained for fruit and the profits of the venture. Furthermore, and probably most important of all, promotion schemes should be scanned closely and candid advice given proposed purchasers as to the probability of a successful outcome. In other words, make it practically impossible to promote a commercial proposition without the organization's approval. It requires no argument to show that such an organization could control productions within proper limits. Such an organization must necessarily act in the interest of the fruit-grower, and never in the interest of the promoter. Speculation in fruit or lands should be discouraged and fraud should be impossible. But this should not be the end of organization. There should be one great central organization for the purpose of marketing the product. The extent and jurisdiction of this organization should be as wide as possible, certainly not less than the States of Oregon and Washington and probably Idaho. Local organizations should be the constituents of the central one.

Under such organization of the industry one very prevalent idea must be abandoned, and this is high prices. High prices invite ruinous competition and seriously impair consumption. Remove the governing factor of moderate prices and the machinery soon breaks into ruinous speed. Then it isn't a question of coming back to normal and averaging up. The whole machine must be reconstructed and a new start made. No, the purpose of organization should be to sell high enough for a proper profit and low enough to invite the fullest consumption. This has become the axiom of all successful trade.

Now, Mr. President, I hope you will not consider that I have taken advantage of your kind invitation to lay before you my failures, misgivings and fears for the mere pleasure of doing so. I have embarked in the business to stay, and my greatest pleasure would be in realizing success, not only for myself, but for all similarly engaged.

My friends could not believe—in fact, I

think do not yet believe, that I could find in orchards, in fields and forests an occupation with an all-satisfying entertainment. They have warned me in all kindness to be prepared to hear and to obey the call of a lifetime occupation which they imagined had completely enmeshed me, and which in its own time would relentlessly drag me back to its strifes, its conquests and its defeats. But neither to the ear nor to the heart has any such summons come. The occupations of agriculture and horticulture have a never-ending interest. They not only do not stale, but, on the contrary, continually broaden and expand as we proceed in their development. To the lover of such

things a violent enthusiasm can see no end. Each advance opens further inviting prospects, requiring further time and greater outlay, beyond I fear what the financial returns will justify.

But to him who can forget the world of business enticements, and is drawn to the country by nature's own attractions, where will he find the mountains so far away in their coldness and yet so near in grandeur; the hills so clothed in verdure and so inviting; the woods so wild and full of interest; the vales so quiet and pastoral; the air so balmy and bracing; the streams so shaded and rippling and every feature of nature so pleasing.

Scientific Evaporation

By W. H. SWETT

THE art of commercial evaporation can only be attained when all the physical laws are adhered to. The violation of any one of these laws will leave its effect upon any material being dried.

First to be considered is the effect of improper and proper circulation of the air within the drying chamber. The air, being the natural agent for conveying the moisture from the product to the outer air, must move freely through the interior of any apparatus in which drying is being done. Air that becomes stagnant becomes saturated with moisture and in a few minutes will not receive or absorb any additional moisture. Where the circulation is poor or retarded we get the effect of very slow drying with a poor product. Air does not necessarily have to be heated to absorb moisture, but must be in motion to convey the moisture it does absorb, so that the uncharged air may have access to the material being dried. One cubic foot of air at a temperature of ten degrees Fahrenheit will absorb 1.1 grains of moisture and at a temperature of 212 degrees will absorb 295 grains of moisture and become saturated; it is therefore advantageous to ex-

pand the air by heat to increase its absorbing power. Air that is in motion will take up moisture, but owing to its limited carrying capacity it is hardly practical to dry fruits, vegetables or other food products with cool air.

In applying heat we must first consider what effects heat will produce at different temperatures upon the cell structure and the appearance of the dried material; we must also consider the method of gaining this heat from the fuel that is being consumed; this will enable us to economize and not carry the fuel consumption to the point of excess. After ascertaining the most practical means of saving and economizing the heat to produce the proper amount of air circulation and heat within the dry chamber, we must ascertain the volume of air required to dry a given amount of material and the time necessary to vaporize the quantity of moisture contained therein. By combining the two we then have an idea of how much fuel it should take to operate a commercial plant for a given length of time, having knowledge of the amount of fuel necessary to both heat the required volume of air and vaporize a stated amount of water. It is obvious that the outlets must be of sufficient size to promote the proper

circulation without a waste of heated air under any and all conditions.

Now after having found the proper conditions, as above stated, we must not lose sight of the fact that heat at different temperatures and different conditions will produce different results upon material being dried, and so arrange our heating apparatus that the best results which our experiments have shown us will be accomplished when operating the commercial apparatus. We can have no effect without a cause, and as the most prominent factor in producing poorly dried material is and has been, not the lack of knowledge of air circulation or the amount of air required to take up a certain amount of moisture or the amount of fuel required to heat a sufficient amount of air for carrying off the moisture contained in the product being evaporated, but the lack of facilities by those constructing evaporating apparatus to ascertain the best method of applying the heat energy. This one point is the greatest cause of the markets being flooded with poorly dried, poorly appearing, non-nutritious fruits and vegetables. Heat energy, if properly applied, has no power to change chemically the quality of any organic material, but improperly applied it causes the deterioration through a geometrical rearrangement of the molecules of the cell structure, thus permitting the admixture of the oxygen of the air with the constituent parts of any material being dried, producing by the combination a deleterious effect, and until investigators familiarize themselves with heat energy effects they will not be able to perfect a drying apparatus that will dry fruits, vegetables or meats and retain their nutritive elements without impairment.

There are two conditions under which heat may be applied—vertical and horizontal. Vertical is improper because it produces the detrimental effects before mentioned, and any apparatus that is so constructed that the vertical heat rays are employed will produce a product of low food value as compared with the fresh product first put into the dry chamber. The table of food values in the Year Book of the U. S. Agricultural Depart-

ment of 1907, page 375, will confirm this statement.

In 1895 my attention was directed to the fact that products suspended at an altitude of from 18 to 20 feet show a retarded inclination to deteriorate as compared with the same product when close to the earth. This led me to make a great variety of experiments and exhaustive tests. I have determined that there is a phenomenon of two distinct systems of rays or projections that surround the earth. One of these rises in a vertical line and extends to a height of from 18 to 20 feet. The other envelops the earth to an unknown height, and so far as I can determine its flow is in a horizontal plane and is direct solar energy. The vertical ray or force is apparently the effect of solar energy absorbed by the surface soil or rocks and given off as latent energy. In my experiments carried on in the western hemisphere from the tropical countries northward into British Columbia and from tidewater to 12,500 feet elevation, I have found these vertical rays in all cases, and that they rise to a height of from 18 to 20 feet. During these experiments I have used a great variety of instruments devised by myself and any organic material that could be used for the purpose of determining both vertical and horizontal conditions or motions. My experiments lead to the fact that the function of the vertical ray is to produce disintegrating effects upon all organic matter.

I decided that it was possible to construct apparatus that would eliminate the vertical wave motion or ray as I am inclined to call this force, and to project by artificial methods the horizontal ray only upon products being cured or preserved, and thus prevent their deterioration. I then proceeded to construct apparatus upon these lines and experiment with them. In these experiments I searched such textbooks and technical writings as I could get possession of, with a view to learning, if possible, if others had, in their researches, noticed the same phenomena as had been brought to my attention in my experiments. I found that in 1840, 1841 and 1842 there were experiments made by several German and English scientists who determined that such

a condition existed and that chemical changes were produced by the ether wave vibrations which travel in a perpendicular or vertical line, and which they determined was the primary cause of decay, making conditions right for both chemical and micro-organism disintegration of the cellular structure, and that the ether wave vibrations that move in a horizontal line when produced by artificial means had the power of preventing disintegration without the power to produce "chemical" changes.

I found in tests that it was possible to apply this principle for commercial purposes and thus provide means of economically preserving food products, either vegetable or flesh, for an indefinite period, the time varying with the material worked upon from two to seven years. The minimum I decided was sufficient for all commercial purposes. I also found by the use of the electrical apparatus and liquid air tests that frigid conditions would produce a stronger agitation of either the vertical or horizontal radiation than would heating agitation up to about 225 degrees, when the product was acted upon by direct heat force, which produced chemical change of an entirely different nature from decomposition changes.

A phenomenon that I found in my experiments was that the long ray could be broken up into short rays, producing the same effect as the vertical ray in transit through ordinary glass, quartz-crystal and other such like transparent matter, exclusive of water and rocksalt crystals; but that glass and transparent matter covered with a coating of oil carbon did not affect or break up the long ray in passage through air, the same being found to apply to wood, charcoal and other organic and earthy opaque materials. Organic matter was readily affected, all conditions being equal, by an insertion of a transparent glass intercepting the line of travel of rays between trays containing drying material. On either side of glass there was a noticeable chemical change in every experiment I have made. The reverse has been the case where glass, covered with oil carbon, has been used in all attempts to intercept or break up the long rays.

In my experiments, both in tropical and temperate zone countries and at various altitudes, I have found that the horizontal heat ray has not the power to cause chemical changes to take place, hence there is only a nominal food loss from material entering drying chamber of an apparatus so constructed as to employ only the horizontal heat rays. The products so dried will contain in their cell structure the essential oils, acids, sugar and other constituent elements unimpaired and will remain tender and succulent, thus producing a product of the highest commercial value.

MAKE THE BEST OF IT.

A merry heart, a merry laugh,
A face with lots of sun in it,
A merry tongue with merry chaff,
And quip with lots of fun in it!

If trouble comes, and trouble will,
When others make a guest of it,
Keep on a smiling face, and still
Strive on and make the best of it.

And if the worst comes to the worst,
And life has no more zest in it,
Well, there are fewer clouds to burst,
So why not make the best of it?

Then learn to leave behind you care—
A fool but walks abreast of it;
Don't be a victim of despair,
But always make the best of it.

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Maxwell Smith, Editor.

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Canada

Out of the clouds on Time's horizon, dawneth the new Day, spacious and fair:
White-winged over the world it shineth; wide-winged over the land and sea.
Spectres and ghosts of battles and hatred flee at the touch of the morning air:
Throned on the ocean, the new Sun ariseth; Darkness is over, we wake and are free.

Ages of ages guarded and tended mountain and waterfall, river and plain.
Forests that sighed with the sorrows of God in the infinite night when the stars looked
down,—
Guarded and tended with winter and summer, sword of lightning and food of rain.
This, our Land, where the twin-born peoples, youngest of Nations, await their crown.

Now, in the dawn of a Nation's glory, now, in the passionate youth of Time,
Wide-thrown portals, infinite visions, splendors of knowledge, dreams from afar,
Seas, that toss in their limitless fury, thunder of cataracts, heights sublime,
Mock us, and dare us, to do and inherit, to mount up as eagles and grasp at the star.

Blow on us, Breath of the pitiless passion that pulses and throbs in the heart of the sea
Smite on us, Wind of the night-hidden Arctic! breathe on us, Breath of the langorous
South!
Here, where ye gather to conflict and triumph, men shall have manhood, Man shall
be free;
Here hath he shattered the yoke of the tyrant; free as the winds are the words of his
mouth.

Voice of the infinite solitude, speak to us! Speak to us, Voice of the mountain and
plain!
Give us the dreams which the lakes are dreaming—lakes with bosoms all white in the
dawn;
Give us the thoughts of the deep-browed mountains, thoughts that will make up as
gods to reign;
Give us the calm that is pregnant with action—calm of the hills when the night is
withdrawn.

Brothers, who crowd to the golden portals—portals which God has opened wide—
Shake off the dust from your feet as ye enter; gird up your loins, and pass within;
Cringing to no man, go in as brothers; mount up to kingship side by side:
Night is behind us, Day is before us, victories wait us, heights are to win.

God, then, uplift us! God, then, uphold us! Great God, throw wider the bounds of
Man's thought!
Gnaws at our heart-strings the hunger for action; burns like a desert the thirst in
our soul:
Give us the gold of a steadfast endeavor; give us the heights which our fathers have
sought.
Though we start last in the race of the Nations, give us the power to be first at the
goal.

—Frederick George Scott

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Sod Mulch vs. Clean Cultivation

By H. F. HALL, Geneva, N.Y.

THE two methods are radically different. Both, evidently, can not be equally right; yet advocates of each system found orchards whose yields and conditions lent force to theoretical arguments for sod mulch or tillage. The latter method apparently rests on a firm scientific foundation, and should be the more successful unless the apple tree is an anomaly among cultivated plants; for with practically all crops men grow, tillage is a most efficient means of increasing yields and improving quality. "Clean culture" for orchards, followed by cover crops, has been urged for a quarter of a century or more by nearly all college and station horticulturists, and the general tendency among progressive orchardists is towards closer adherence to the practice of turning over the soil of their orchards every spring, cultivating them thoroughly until midsummer to keep down grass and weeds and to hold the moisture, and sowing some cover crop to grow in the fall and spring as a check to undue luxuriance and sappy wood growth and as a source of humus and nitrogen for the next season's crop. Of 700 orchards of which report was made to the Station, more than 400 are cultivated annually or every other year; while the owners of many other orchards said they believed tillage would be better, but feel themselves obliged to leave the trees in sod through lack of time to cultivate, because the orchard area is needed for pasture, or for similar reasons of expediency not governed by the welfare of the trees as fruit producers.

The question was considered settled by most students of horticultural problems; but the ardent advocacy of sod mulch by its supporters reopened the discussion. The situation called for definite figures based on scientific comparison of the two methods under similar conditions; but it was found that such data were surprisingly scanty. The adherents of each method had been using the success of particular orchards to support their views; they did not know whether the other method would have given similar, better or poorer results in the same orchard in the same years.

Indeed, only two true comparison tests were found recorded, one at the Ohio Station and one in England.

The Ohio experiment, on which recent advocates of the sod mulch system have laid such stress, was, as reported in Ohio Station Bulletin 171, only a preliminary report of a young orchard, the entire crop of fruit of the two plats being less than 400 apples; while almost no fundamental data are given to prove the reliability of the test of the applicability of the results to other orchards.

The English test, at the Woburn Experimental Fruit Farm, showed marked harmful effects from grass about the trees—a result the investigators attributed to a poisoning of the sod, for apples, by the grass roots.

To meet this lack of definite data from scientific side-by-side comparison of the two systems, the Station leased two orchards in 1903, and laid to grass half of each, the other half being given clean

culture each year, and the sowing of a cover crop in midsummer. One of these orchards, that of Grant Hitchings near Syracuse, is somewhat inaccessible, making it more difficult to secure all the needed data, and some of the trees are quite young, so no report will at present be made on the experiment there. This bulletin deals entirely with work in the Auchter orchard near Rochester and discusses five full seasons' results.

This is an orchard of Baldwins, trees set forty feet apart each way and twenty-six years old when the test began. The entire orchard contains about $9\frac{1}{2}$ acres in a long rectangle, divided in halves lengthwise; but a few trees, not Baldwins or in poor condition, are excluded, so that the sod-mulched trees number 118, the tilled trees 121. The orchard in practically all respects is typical of the western New York apple belt. A low, slightly stony ridge crosses the area diagonally, from which the land slopes north and south, with a small area in one corner low enough to require some tile drainage. On the ridge and high ground the soil is fertile Dundirk sandy loam nine or ten inches deep underlaid by a compact sandy subsoil; while on the slopes and lower land the loam is darker, an inch or so deeper, and the subsoil finer sand, more compact. Both soils and subsoils are very uniform.

The treatment of the trees has been alike except for the soil management, so that variations can very justly be attributed to the different effects of grass and tillage. As sod mulch, or the so-called "Hitchings method," was the most strongly advocated of any of the non-tillage methods of orchard management, this was adopted as the system for one-half of the orchard. This area was seeded down on October 15, 1903, to a mixture of orchard grass and blue grass, and in the spring of 1904 an additional seeding was made of these two grasses with a little timothy. All the grasses were evident the first season, but the orchard grass took the lead for second year, so that since that time the trees in grass have been surrounded with a fine, uniform, heavy yielding, orchard-grass sod. If used for hay the crop would average

two tons to the acre; but nothing is removed from the soil except the apples. The grass has been cut each year late in May or in June, and in three of the seasons mowed again in July or August. The material is allowed to lie where it falls, as the tree roots extend through all the soil, so it is necessary to mulch the entire surface.

The other half of the orchard has been plowed each year during the last week in May or the first week in June, rolled, harrowed from four to six times, and sown to a cover crop of clover or oats about August 1.

Phosphoric acid and potash were used at first, in quite liberal quantities, and, of course, like amounts of each plat. In no case have these given appreciable results, whether alone or in combination, so their use has been discontinued. This is in harmony with several other fertilizer tests recently ended, and would apparently indicate that additional mineral fertilizers are not needed for apple trees on any Western New York soils.

Fortunately for the experiment there has been no "failure" in any year of the five. Each season some or all of the trees have borne fruit, and in three seasons the yields have been above the average. The trees have grown, each year, particularly on the tilled plat. Neither have insects or disease interfered with the interpretation of the results, although both plats have shown some insect work in one or more years.

While the crop production must be the final measure of the success or failure of a method of management, it might, in a short test, be an unfair measure because falling or dying trees sometimes bear heavily, or, on the contrary, healthy trees may occasionally overbear and suffer long continued weakening. In a fair test, all possible points of comparison should be included, and the attempt has been made to do this in comparing the sod mulch and tillage methods.

The effect on the trees really comes first and is a most valuable index, for the trees are always present for study, and differences, if noteworthy, are permanent. Fruit is available for only a comparatively short time and the crops

for a single year may yield deceptive figures.

In the Auchter orchard, there is now at the end of five years, as there has been to a gradually increasing degree in the passing seasons, a marked contrast between trees in sod and trees on tilled soil. The cultivated trees are more uniform, larger, show much more new growth, both in number of twigs and in their length and size; they are practically free from dead wood and are noticeable, as

far as the orchard can be seen, for that indescribably clean, rich, full, glistening, smooth-barked appearance that denotes perfect health and surplus vitality. The trees in sod, on the contrary, lack so many of these indexes of vigor that anyone familiar with healthy trees would be dissatisfied with these unthrifty looking ones.

Careful measurements have been made, wherever size or length means anything, and a few of these are given below:

Table I.—Growth of Apple Trees Under Sod-Mulch and Tillage.
Gain in Diameter of Trunks.

Year	Sod—118 trees.					Tillage—121 Trees.				
	Row 1	Row 2	Row 3	Row 4	Row 5	Row 6	Row 7	Row 8	Row 9	Row 10
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1908.....	15.2	15.2	14.5	14.9	14.1	15.0	14.5	15.8	15.9	17.0
1904.....	13.6	14.1	13.5	14.1	13.1	12.9	12.4	13.6	13.8	14.7
Gain....	1.6	1.1	1.0	0.8	1.0	2.1	2.1	2.2	2.1	2.3
Average gain for sod—1.1 in.					Average gain for tillage—2.1 in.					

Average Length of Annual Growth and Average Number of Laterals.

Year.	Sod.	Tillage.	Difference.
	In.	In.	In.
1904	5.8	7.9	2.1
1905	4.2	7.2	3.0
1906	2.7	6.5	3.8
1907	2.5	6.9	4.4
1908	1.9	5.0	3.1
Average annual growth	17.1	33.5	16.4
Average number laterals, per year.....	3.4	6.7	3.3
Sod, tillage, difference	1.9	4.4	2.5

For the diameters, two measurements were taken on each tree, one a foot above the soil and the other a foot below the first branches. The table shows a uniformly smaller gain for the five years for the trees in sod, as compared with those on tilled soil, compared row by row or as a whole. If the outer row, Row 1, be excluded, which had some advantage, since its roots passed under a stone wall and fed in an old lane, the comparison is still more favorable to the cultivated trees, the average gain in diameter for the other four rows being less than an inch, as compared with 2.1 inches for the trees on the tillage plat.

In comparing the "new growth," outside trees were excluded in both plats be-

cause of the lack of uniformity of growth on such trees. Branches were cut on five sides of each 48 trees in the centre of each plat, 240 in all, and the figures show the averages from measurements of all these branches. Weights taken after the branches had been measured showed the new growth from the tilled trees to be three times as heavy as that from the trees in sod—strong testimony to the better health of the tilled trees.

The trees on the tilled ground showed very uniform symmetrical heads, with few straggling, abnormal branches and little dead wood; but those on sod revealed many such irregularities. This contrast was even more noticeable with roots than with the branches; for when-

ever there was a chance the roots from trees in sod shot out a long distance to secure food or to get away from the grass roots. Many roots on the sodded row, next the tilled ground, extended over the boundary, running thirty feet or more to get into conditions that suited them better. The same was true also of trees on the other edge of the plat, whose roots in many cases ran to and under a stone wall out into the old lane.

Great as was the contrast between the trees in winter, it was even greater when the trees were in full foliage. "The dark, rich green of the tilled trees indicated an abundance of food and moisture and the heyday of health, while the pale and sickly foliage of the sodded trees suggested drouth, starvation or some serious physiological disturbance. More than one man of the hundreds who visited the orchards was heard to say, as his eyes lighted on the contrasting colors of tilled and sodded trees, "that satisfies me."

While it was impossible to secure an exact measure of this color difference, some weights were taken that show how much larger and better were the leaves under tillage. From the same trees used in comparing the wood growth, groups of ten leaves were taken from the tips of shoots on five sides of the trees, 2,400 leaves from each plat. These weighed for the sod-mulched trees 132½ grains,

and for the tilled trees 177½ grains. That is, considering size alone and not taking into account the apparently much greater number of leaves on the cultivated trees, these had one-third more leaf area than the sodded trees; consequently one-third more laboratory space to evaporate sap and manufacture starch and chlorophyll. The leaves on the tilled trees also opened three or four days earlier than the others, probably because the cultivated soil was warmer, and they remained green and vigorous a week or ten days after the trees on the sod began to show the autumn hues which betoken the end of labor. In every respect but one, this added life was an advantage. The falling of the leaves, however, let in more sunlight on the apples above the grass, and helped to color them a brighter, deeper red. In this characteristic color, and in this alone, the fruit from trees in sod was better than that from the tilled trees.

The crop of fruit for one year might not be a reliable index to the value of any orchard practice; but consistent results for five years with increasing contrasts should be decisive. Such results were secured in this test, as shown by the yields given in the table below, and by various characteristics discussed in later paragraphs.

Table II.—Yield of Fruit on Sod and Tillage Plats.

	SOD PLAT---118 TREES				TILLED PLAT---121 TREES				Diff. in favor tillage
	1st Class	2nd Class	Culls	Total yield	1st Class	2nd Class	Culls	Total yield	
	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.	Bbls.
1904	278	51	a286.1	615.1	269	47	a275.9	591.9	—23.2
1905	123.3	38	71.7	233	149.3	34	95.6	278.9	45.9
1906	135.3	32	43	210.3	255.3	b90	b185.8	531.1	320.8
1907	144.3	35	87	275.3	248.3	62	113	424.3	149
1908	255.3	17.5	52.5	325.3	480.3	c60.5	c181.7	722.5	397.2
Average	187.2	36.5	108	331.8	280.4	58.9	170.4	509.7	177.9
Average on basis of 121 trees—									
	191.9	37.4	110.7	340.2	280.4	58.9	170.4	509.7	169.5
d Acre average	41.1	8	23.7	72.9	60	12.6	36.5	109.2	36.3

a—September storm blew half the crop from the trees.

b—Increase in culls and seconds due to aphid injury of fruit.

c—Increase in culls and seconds due to curculio injury of fruit.

d—On basis of 27.2 trees per acre.

The first year, as shown by the table, the yield was slightly better on the sod plat; but in every succeeding year the balance has favored the tilled plat, and

the difference the last year was greater than any preceding one. The good effect of the tillage or the bad effect of the grass, or the combination of the two, is evidently a cumulative factor, not a diminishing one. There is nothing here to indicate that the trees will "become accustomed to grass."

This increased yield of cultivated trees is due to two factors, greater number of apples setting and maturing, and greater size of the individual apples. No count was made of fruits on the trees, but observations on bloom and fruit setting showed that practically the same percentage of the blossoms set fruit, whether the bloom was full or scanty; and in two of the three years when observations were taken, the percentage of bloom on the tilled plat and on the sod plat was 21.6 compared with 36.4, and 25.3 compared with 55.4. That is, the trees under culture set one and two-thirds times as many fruits the first year, and more than twice as many the second year. For size, the apples in several barrels from each plat were counted, the average number being 434 for the fruit from sod, and 309 for fruit from tilled trees. The average weights of sod and tillage apples were 5.01 ozs. and 7.04 ozs. That is, the apples from the cultivated trees weighed one-third more than the others.

A very noticeable feature of the crops on the tilled plat was their uniformity. As the trees themselves were very uniform in growth and very symmetrical, so the apples were well distributed over the branches on all sides of each bearing tree, thus insuring a much larger crop than would scattered heavily loaded branches among barren ones, as was often the case of the sod-mulch plat. The even distribution of the fruits also makes easier harvesting, and so tends to economy in handling the crop. The trees in sod showed marked abnormalities in their tendency to produce large fruits or large crops on a part of the trees, and small fruits or none at all on another part. The fruits also were much more uniform in size and more even in color on the cultivated trees than on those in sod—a contrast

which is not shown by the figures for firsts, seconds and culls, because aphid injury, curculio injury and a severe windstorm threw among the culls of the tillage plat many barrels of apples that did not belong there through small size. In a discriminating market, even fruit like that from the tilled trees would sell more readily than the uneven grades from trees in sod.

The trees in sod gave fruit of better color; but the color was no index to quality; for the larger fruit from the tilled trees, though slightly duller in tint, was unmistakably finer in everything that goes to make an apple good to eat—aroma, flavor, texture and freedom from internal blemishes. This difference was a surprise to all who tasted the fruit, either at the station or at the various horticultural gatherings where the apples were exhibited.

The difference in texture was largely due to the relative difference in maturity of the fruits at the same time; for the trees in sod ripened ten days or two weeks earlier nearly every year and, in ordinary storage, did not keep as long by nearly a month. In cold storage, however, the difference in keeping quality was much less or disappeared entirely.

The early ripening of the sod apples was very noticeable in warm autumns and was a decided disadvantage for a winter apple in such seasons.

It is not always certain that the larger crop will give the greater profit, for a good yield at a moderate cost of production often leaves the grower richer than a maximum crop obtained by heavy fertilizing, extraordinary thoroughness in cultivation, and special care. It is one of the strongest arguments of the sod-mulch method advocates that that system is an inexpensive one. The cost was slightly less in that half of the Auchter orchard, but the gains were so much less that the tillage proved by far the most profitable. This is clearly shown by Table III, in which the main points of varying expense by the two systems are contrasted. Fertilizing and spraying cost the same, and pruning cost about \$8 more for the trees which were tilled.

Table III.—Expense and Income from the Sod-Mulch and Tilled Plats.

Year	SOD PLAT---118 TREES				TILLED PLAT---121 TREES			
	Cutting grass	Harvest- ing	Total expense	Net income	Culti- vation	Harvest- ing	Total expense	Net income
1904	\$19.99	\$219.25	\$327.14	\$225.76	\$33.75	\$210.90	\$332.55	\$185.34
1905	7.46	82.89	166.47	330.28	48.71	96.85	221.68	355.60
1906	3.36	104.30	186.29	154.96	30.30	231.80	340.73	292.42
1907	3.67	138.07	239.28	487.16	46.63	224.20	371.35	800.31
1908	6.14	173.43	246.88	253.86	36.67	338.59	447.82	723.41
Total	\$40.62	\$717.94	\$116.06	\$1552.03	\$196.06	\$1102.34	\$1714.13	\$2357.08

Allowing 27.2 trees to the acre, these figures show that the average expense of production was \$53.75 an acre annually under the sod-mulch system, and \$76.06 under tillage, an advantage for the sod-mulch of \$22.31 per acre, but the net income from an acre in sod was \$71.52, and from an acre in tillage \$110.43, an advantage for tillage of \$38.91. That is, every dollar of the additional expenditure (\$22.31) made necessary by adopting the tillage method was not only returned, but brought an extra \$1.74 of profit with it. Surely the less expensive method was not the more profitable one here.

Considering all the evidence, then, there can be no question that tillage is far better than sod mulch in the Auchter orchard; and the Auchter orchard is typical of the great majority of orchards in Western New York. It is safe, therefore, to make the statement general, and say: "Tillage has been proved better than sod mulch for orchards." There remains only the need of analyzing the conditions and results to see why it is better. By such analysis it is plainly shown that the tilled soil supplies more water to the trees, and the water carries with it more plant food; that tillage makes the soil warmer, allows the air freer access, and favors the growth of beneficial bacteria in the soil; and that the turning under of a cover crop increases the supply of humus—all factors favorable to better plant growth. It is possible, also, as held by the English investigator and others, that the grass roots in some way cause conditions in the soil that really poison the apple roots.

But one factor, moisture supply, is enough to account for practically all the difference in results between the two plats. The best soils may fail to produce good crops because of drouth; poor soils produce good crops if rains are copious

and well distributed; so it needs little argument to prove water the leading factor in good production. Indeed, many now hold that, in the final analysis, the only factor which the cultivator needs to control or can control is the moisture supply.

In this water supply the two plats showed striking differences.

On the sod-mulch plat the growing grass in spring and early summer rapidly lowers the store of moisture in the soil, while on the tillage plat the repeated harrowings make an earth mulch that effectively conserves the water. Careful studies have been made by Prof. King at the Wisconsin Station, and by German investigators, of the amount of water needed for different crops. They find that a grass crop, like barley, uses 464 tons of water to produce a ton of dry matter in the crop. Now, the grass on the sod-mulch plat produced the equivalent of two tons of hay every year, according to the estimate of several good farmers, or 1.7 tons of dry matter. This would require for its growth at least $6\frac{3}{4}$ inches of rainfall; and the water escaping by running off the land after heavy showers, by drainage and by natural evaporation, accounts for six inches more of rainfall at the lowest estimate. But only $17\frac{3}{4}$ inches of rainfall come during the six months of tree growth, as shown by the records at Rochester for 25 years. Accordingly, on the sod-mulch plat, only $6\frac{3}{4}$ inches would be left for the apples. This is an amount entirely too small for a heavy crop, since the apple demands more moisture than other crops, because of its vast extent of leaf surface. Prof. Loughridge, of California, made some studies along this line and found that the apple required three times as much water as the apricot, olive or peach, twice as much as orange, lemon or fig, one and a

half times as much as the almond and plum, and one and one-fifth times as much as the grape. Is it surprising that the crops competing with the grass were small, especially as the grass was growing most vigorously just when the developing leaves, the swelling fruit buds, the growing fruits and the shooting new wood needed water most?

This reasoning is founded on indirect observations and logic; it is confirmed by actual moisture determinations made repeatedly during two seasons of samples of soil from different parts of the two

plats. In all, 120 determinations were made covering the growing season of 1907 and 1908, and in every case more moisture was found in the tilled soil in both the first six inches and the second six inches of soil. In some cases considerably less than half as much water was found in the sod soil as in the tilled soil, and in only one case was the difference less than ten per cent. of the water in the soil. The average percentages and the value of these percentages in tons and gallons of water to the acre are shown in the following table:

Table IV.—Moisture per Acre in Tilled and Sod Plats.

Soil depth	Plats	1907			1908		
		Per ct.	Tons	Gallons	Per ct.	Tons	Gallons
1-6 in....	Tillage	12.20	109.80	26,330.9	14.04	126.36	30,302.1
	Sod.....	7.30	65.70	15,755.4	10.06	90.54	21,712.2
	Difference	4.90	44.10	10,575.5	3.98	35.82	8,589.9
1-12 in....	Tillage....	11.53	152.64	36,604.2	13.57	181.17	43,446.0
	Sod.....	6.52	84.60	20,287.7	9.37	123.39	29,589.9
	Difference	5.01	68.04	16,316.5	4.20	57.78	13,856.1

The figures show that in 1907 the soil under sod had only three-fifths as much water in the upper six inches as did the cultivated soil, and a little less than that proportion in the entire upper foot. In 1908, both soils held moisture, but the sod soil nearly one-third less than that cultivated.

That the available supply of plant food was a negligible factor in this orchard is shown in two ways; First, the addition of considerable supplies of such food in the form of readily soluble acid phosphate and muriate of potash gave no results; and second, chemical analysis of many soil samples showed abundance of plant food in both soils, with no consistent differences. Such slight variations as there were favored the soil in sod, and would apparently show, if anything, that the soils were very much alike in available fertility at first, and that a little more plant food had been removed from the tilled plats by the larger crops of apples. However, it should be said that most of the variations were within the range of error in sampling and analysis and really meant nothing.

But the trees in sod undoubtedly suffered from lack of food as well as from lack of water; because plants take food

only in solution, and very dilute solution at that, and the water was not present to dissolve from the soluble store in the soil anything like the amount needed by the grass and the trees in sod. The grass roots surrounded the tree roots and ate at the first table: the trees starved on the crumbs left.

Chemical determination did prove one thing, though, and that was the fallacy of the stock phrase constantly presented by sod-mulch advocates: "Tillage burns up humus." The tilled soils averaged $1\frac{3}{4}$ tons to the acre more of humus than the soils in sod. Of course, tillage without any addition of organic matter in manure, cover crops or catch crops would soon use up the supply of humus in the soil; but a properly balanced method of tillage and a cover crop each year increase the supply instead of diminishing it. It is an improper tillage the sod-mulch promoters have been comparing with their system as a humus destroyer, not the system which students advocate and leading orchardists follow.

The tilled soils are warmer than the sod soils. Observations made for four weeks, mostly in July, at 7 o'clock in the morning and at 6 o'clock at night, showed, for the first six inches of soil, a difference of more than a degree in the

morning, and more than $1\frac{1}{2}$ degrees at night, and for a depth of 12 inches a difference of 2 1-3 degrees in the morning, and $1\frac{3}{4}$ degrees at night, all in favor of the tilled soil. Just how much part this added warmth in the tilled soil plays in apple growing we do not know; but, in general, heat hastens the solution of food substances and makes the solutions diffuse more rapidly; it increases the movement of air in the soil, it develops stronger osmotic pressure, the force that sends sap into the roots and through the plant, and it stimulates the beneficial bacteria in the soil, especially those that form nitrates.

A quite evident manifestation of the influence of warmer soil was the earlier coming into leaf of the trees on the tillage plat.

A tilled soil is an aerated soil and free circulation of air in the soil is beneficial in many ways. A warm, well-ventilated moist soil is favorable to the growth of beneficial bacteria, those that cause the fermentations, decays and putrefactions which break down organic matter into forms available to plants, and, as mentioned above, especially those that change other forms of nitrogen to nitrates, which are the main, if not the only forms of this element which enter plants.

A tilled soil is also free from weeds and other plants; so there can be no danger from poisonous excretions from their roots or from bacteria which associates with them. It is a quite common belief now that many plants do, by actual poison, disastrously influence successors or associates; and this factor, in the English experiment, mentioned before, was regarded as the main reason for difference between trees in sod and tilled trees.

It is not necessary to lay much stress on other factors, however, in this experiment; for the small amount of water available for trees on the sod mulch plat, with the consequent poor supply of food, is amply sufficient to account for the crop differences.

The well-being of nearly all the plants which minister to the needs of man is improved by tillage. It does not appear from this experiment that the apple is an

exception. This fruit responds to high cultivation in the nursery row; it seems to continue to do so when transplanted to the orchard. Results as positive as in this experiment can be made very comprehensive. They will, it is believed, apply to all varieties of apples, and to all fruits for that matter, and to practically all fruit soils and conditions. It should be expected, for instance, that in a deep soil, where the apple roots can escape from the grass roots, or in one containing a great amount of soil moisture, the harmful effects of the grass will not be so marked as otherwise. The experiment does not show that apples cannot be grown in sod. There are many orchards in New York which would prove the contrary. It suggests, however, that apples thrive in sod, not because of the sod, but in spite of it. The fact that there are many thrifty orchards in sod in New York is not proof that these orchards would not do better under tillage.

In considering the new methods of management, of all the factors affecting the growth of trees in this experiment, conservation of moisture should receive first attention from the apple grower. This statement is affirmed not only by the results in Auchter orchard, but in practice the world over. The climate of Europe is moist; sod orchards are the rule there. Near the Atlantic seaboard in America, as in New England, where the rainfall is comparatively high, thrifty orchards are found in sod. In the western fruit regions where irrigation is practised, sod orchards are hardly to be found; water is purchased and must be conserved. In irrigated lands tillage is found to be the best means of moisture conservation. Moisture is by no means the only factor to be considered in the controversy over the sod and tillage methods of management, but it appears to be the chief one.

To manage the soil of an orchard properly requires nice adjustment and delicate balancing for each particular case. Soils vary much, and are all complex; quite diverse chemical, physical and biological changes take place in diverse soils. Every apple-grower, therefore, has a problem of his own.

Canadian Independence

By JOHN S. EWART, in the "Canadian Magazine"

WHAT did the Canadian House of Commons mean when, the other day (22nd February) it unanimously and "emphatically" affirmed "its determination to preserve intact the bonds which unite Canada to the British Empire?"

Are there any such bonds? What is the British Empire?

Some years ago, ready and simple answer could have been made to such questions. Canada was then rather a part of the British Empire than related to it; and the bonds—the legal and constitutional bonds—were those of political domination on the part of the United Kingdom and political subjection on the part of Canada. The British Empire (let us use the phrase correctly) consists and always has consisted of two parts: the dominant and the subordinate parts—in other words, the United Kingdom which rules, and such parts of the world as are ruled. So long as Canada was governed legislatively at Westminster, and executively at Downing Street, Canada was a part of the British Empire—she was a British possession. Now she is not. She is no longer subordinate. She is an independent state. The British Empire still, of course, remains. It consists, as formerly, of the United Kingdom and those parts of the world which it rules—India, parts of Africa, etc., etc. But it does not rule Canada. Canada is not part of the British Empire, any more than the United Kingdom is part of the Canadian Empire.

The House of Commons seems, in its resolutions, to have had some consciousness of the fact that Canada is not a part of the British Empire, for it refers to the bonds which "unite" the one to the other. Probably that is not exactly what most of the members meant. What did they mean? To what "bonds" did they refer? Speaking politically, there is only one such bond—namely, the King. The relationship of Canada to the United Kingdom is that of two nations with the

same sovereign. Neither has jurisdiction or authority over the other. There is no organism of which they are both parts. Each is quite independent of the other. Each is a little diffident even about offering advice to the other. The relation is precisely the same as that which existed between England and Scotland from 1603 to 1706, and between Great Britain and Hanover from 1714 to 1837—two kingdoms and one king. Such would be still the relations between Great Britain and Hanover had not the Hanoverian Salic law prohibited a female sovereign. The separation took place when Victoria became Queen of England. And it must be observed that two countries related in this way cannot be spoken of as constituting an Empire. No one would be understood if he spoke of England and Scotland, and of Great Britain and Hanover, during the years just mentioned as an Empire. They were separate kingdoms.

What I have said has been based upon the reality of things, and not upon the form of them. Theoretically, Canada is not independent. Practically she is. An analysis of the subject will make this indisputable.

In the first place, we are fiscally independent; we make our own tariffs; we frame them as we wish; we tax British and other goods as we please; and neither the Colonial Office nor the British Parliament has any right whatever to interfere. That, of course, was not always the case. Until the middle of the first century our tariffs were made for us, and they were made, not in our interest but in the interest of the United Kingdom—as is the Indian tariff today. Our trade was a British monopoly from which other nations were excluded. Our raw material went to but one market. Our purchases of manufactures were made in Britain and nowhere else—no matter what the difference in cost. No ships but British ships entered our ports.

The advent of free trade in the United Kingdom ended the prohibitions, and we commenced (1859) the regulation of our own tariffs. Naturally enough the British manufacturer did not like our methods, and the Colonial Office intervened and contemplated disallowing our statute. The threat brought a plucky reply from the Canadian Government: "Self-government would be utterly annihilated if the views of the Imperial Government were to be preferred to those of the people of Canada. It is, therefore, the duty of the present government (of Canada) distinctly to affirm the right of the Canadian legislature to adjust the taxation of the people in the way they deem best, even if it should unfortunately happen to meet the disapproval of the Imperial Ministry. Her Majesty cannot be advised to disallow such acts, unless her advisers are prepared to assume the administration of the affairs of the colony, irrespective of the views of its inhabitants." (Can. Sess. Papers, 1860. No. 38.)

Again in 1879, when Sir John A. Macdonald's "National Policy" was adopted and additional duties were placed upon British manufactures, came suggestions of intervention. But all assumptions of right to interfere with the Canadian tariff have completely disappeared, and Canada is today, admittedly and undoubtedly, fiscally independent.

Canada is also legislatively independent. In former times her statutes were freely disallowed by the Colonial Office. Interference gradually became less frequent, but it was not until within the last twelve months that we succeeded in obtaining the removal of the embargo upon our legislation respecting copyright. That was the last of our very many struggles for legislative independence. We now have it in unquestioned plenitude. No one disputes it.

We have fiscal independence and legislative independence; and we have also executive independence. Originally our governors were active executive agents of the Colonial Office. Now our governors stand in the same relation to Sir Wilfrid as the King stands to Mr. Asquith. As late as 1875 our Governor-

General asserted a right to exercise his discretion as to the disallowance of provincial legislation, and also as to the pardoning of prisoners. Still more recently, Lord Minto claimed certain personal authority in connection with our militia, and provoked a controversy which led to the recall of General Hutton. That was, and will probably remain, the last of the pretences of our Governors to regulate Canadian affairs.

Canada, then, is independent fiscally, legislatively, and executively. What is her position with reference to foreign countries—first during peace, and secondly, as to war?

Formerly all our communications with foreign countries were conducted by the British Foreign Office, and treaties binding upon us were made without consultation with us. It was not until 1878 that we obtained a declaration that we were not to be bound without our assent. In 1884 Sir Charles Tupper succeeded not only in having himself associated with Sir Robert Morier in negotiating a treaty with Spain, but in having delegated to him the actual work. Again, in 1893, he was associated with Lord Dufferin in negotiations with France, and did the work. Notwithstanding these facts, the Foreign Office afterwards, in 1895 (28th June), declared that "To give the colonies the power of negotiating treaties for themselves without reference to Her Majesty's Government would be to give them an international status as separate and sovereign states, and would be equivalent to breaking up the Empire into a number of independent states"; that "the negotiation must be conducted by Her Majesty's representative at the court of the foreign power, who would keep Her Majesty's Government informed of the progress of the discussions and seek instructions from them as necessity arose"; but that "it would be desirable generally . . . that he should have the assistance, either as a second plenipotentiary or in a subordinate capacity, as Her Majesty's government might think the circumstances required, of a delegate appointed by the Colonial Government."

"Breaking up the Empire" by releasing Canada from subordination, however,

never had any terrors for Canada, and now we negotiate treaties as we like. In 1907 the Foreign Office, in connection with the French negotiations, practically acknowledged the situation.

The great advance in 1907, from the position won for us by Sir Charles Tupper in 1893, was referred to by Mr. Balfour in the British House of Commons on the 21st July last (1910.) He quoted the despatch of 1895, and added: "That was the Radical policy in 1895. It was not the Radical policy, and in my opinion it was rightly not the Radical policy, in 1907, twelve years later. The Dominion of Canada, technically, I suppose, it may be said, carried on their negotiations with the knowledge of His Majesty's representative, but it was purely technical knowledge. I do not believe that His Majesty's Government was ever consulted at a single stage of those negotiations. I do not believe they ever informed themselves, or offered any opinion, as to what was the best policy for Canada under the circumstances. I think they were well advised. But how great is the change and how inevitable? It is a matter of common knowledge—and, may I add, not a matter of regret, but a matter of pride or rejoicing?—that the great dominions beyond the seas are becoming great nations in themselves. Integral parts they are of the British Empire, but nevertheless claiming and rightly claiming to have reached the adult stage in the process of social growth, and requiring no longer to lean in the same way upon other parts of the Empire as was fitting and proper in the earlier days of their existence."

In late years Canada has carried on negotiations with France, Germany, Italy and the United States quite independently of either the Colonial or Foreign Office, and our Government does not see any reason for keeping either offices informed as to what it does. Messrs. Fielding and Brodeur acted quite independently of the British Foreign Office in the negotiations which preceded the French treaty of 1907; and quite recently Mr. James Bryce (who delights to speak of himself as the Canadian, as well as the British ambassador at Washington) assisted the

Canadian delegates, without having received any instructions to do so from London. (Canadian Hansard, 1911, pp. 4109, 4222, 3; and see 4298.)

Two incidents of recent occurrence strongly emphasize the fact of our diplomatic independence. The first is the order by King George that, at the Coronation, the representatives of the Dominions are to be accorded rank with the representatives of foreign nations. The other incident is the invitation extended by President Taft to the Canadian delegates at Washington to be present as guests at the diplomatic dinner in the White House.

"The effect," as the *Toronto Globe* very aptly said, "is to proclaim to the assembled ambassadors of foreign nations that the Dominion of Canada is sufficiently a 'nation' to be regarded as not out of place among the real ones."

Canada is also independent with reference to that most important subject, war. In the old days our Governors controlled our militia, appointed the officers, and issued the marching orders. Lord Minto imagined that the Governor-General still retained certain authority, and would have lost his place had he not been willing to accept the contrary view. Canada has plainly asserted her independence with reference to British wars. (You will observe that I am not at all referring to the action which Canada would take in the event of a British war. I am proving merely that Canada may do as she pleases. Any credit that she got in connection with the Boer war was rightfully hers, only because her action was purely voluntary.) At the Colonial Conference of 1902 Mr. Chamberlain put directly to the Colonial Prime Ministers the question: What contingents will the colonies send in case of a European war? Canada and Australia replied that the matter would be considered, as it should be, "when the need arose."

Since that date Sir Wilfrid Laurier has declared in the House of Commons that Canada may, or may not, take part in British wars. And in 1910 he said: "Does it follow that because we are exposed to attack we are going to take part in all the wars of the Empire? No. We shall take part if we think proper; we

shall certainly take part if our territory is attacked."

There are two other points to be noticed in this connection. In the first place, can we declare war? Of course we can. We can commit an act of war tomorrow, if we so wish. There is very little likelihood of our doing it. We have the power to do it—that is my point. But what is our position in case the United Kingdom is at war? With reference to a situation of that sort, are we independent? Can we do as we wish? To this extent we can: we may decline to take part. It would then be optional with Britain's enemy whether to attack us or to treat us as a neutral. If we were attacked we should have to fight. But the enemy (unless it were the United States) would most probably be only too glad to leave us neutral. Practically, therefore, the decision as to our participation in any war (except with the United States) would rest with us. And in no case need we fight unless we are attacked. No country in the world is any more independent than that.

I have now touched upon the various classes of our national activities. Practically we are independent as to our fiscal relations, as to legislation, as to government, as to treaties, and as to war. Theoretically, we have no independent power. Practically, we are independent, and may do as we please.

And now let me point out that not only is this true, but that all British statesmen acknowledge it as an existing fact. Fortunately the situation is not, as with the United States in 1776, one of assertion on our part and denial by the Imperial Parliament. Upon the contrary, British statesmen quite freely and frankly apply the word "independent" to us, whereas, curiously enough, it is some of our own people that rather shy at it. Let me give you some quotations in proof of what I say:

Mr. Joseph Chamberlain has said: "How are we to bring these separate interests together—these states which have voluntarily accepted one Crown and one flag, and which, in all else are *absolutely independent of one another*?"

"The time has gone by when we could

treat them with indifference, when we could speak of them as though they were subject to our dictation. *They are self-governing nations. They are sister-states. They are our equals* in everything except population and wealth; and very quickly you will find that they will equal and surprise us in these respects."

Mr. Arthur Balfour has said: "There was a time when the relations between the Mother-country and the offspring of the Mother-country were those of parent and child. No politician today holds that view. Everybody, as far as I know, recognizes that the parental stage is past. We have now arrived at the stage of formal equality, and no one wishes to disturb it."

Lord Curzon has said: "In the economy of the Imperial household we were dealing, not with children, but with grown men. At our tables were seated, not dependents or menials, but partners as free as ourselves, and with aspirations not less ample or keen."

These were unofficial utterances. At the Colonial Conference in 1907, the British Prime Minister (Campbell-Bannerman), officially addressing the colonial premiers, said: "We found ourselves, gentlemen, upon freedom and independence—that is the essence of the Imperial connection. Freedom of action in their relations with one another and with the Mother-country."

And Mr. Asquith (the Chancellor of the Exchequer) said: "The special feature of the British Empire has been that it has combined, and succeeded in combining in a degree unknown in any other combination in history, a loyal and affectionate attachment between the centre and parts of the Empire, and between the various parts themselves, with complete practical independence."

Perhaps the statements above made as to Canada being part of the Empire will be more readily accepted if some authority for them is supplied. Lord Milner (probably now the chief of Imperialists), writing in the principal Imperialist publication, the *Standard of Empire*, said: "The word 'Empire' has in some respects an unfortunate effect. It, no doubt, fairly describes the position as between the

United Kingdom and subject countries such as India or our Central African possessions. But for the relations existing between the United Kingdom and the self-governing colonies, it is a *misnomer*, and with the idea of ascendancy, of domination inevitably associated with it, a *very unfortunate misnomer*."

Mr. Joseph Chamberlain has frequently made use of similar language. On 17th May, 1905, he said: "Ours is an Empire—an anomalous Empire. It really is a collection of States which are not bound together by anything more than mere sentiment."

Sir Frederick Pollock, one of the leading English jurists, said (part of it has since become untrue): "Leave the conventions alone and look at the facts, and we find that the 'self-governing colonies' are, in fact, separate kingdoms having the same King as the parent group, but choosing to abrogate that part of their full autonomy which relates to foreign affairs."

Listen to the language of the *Standard of Empire* itself (4th June, 1909): "Leaving theory and legal figment alone, an Oversea State of the British Empire is an autonomous nation. Of its own internal affairs its people are masters precisely in the same sense as the people of Great Britain in regard to their affairs. The King is King of the United Kingdom of Great Britain and Ireland and of the Dominions beyond the sea. That is to say, that in Australia he is King of Australia, and in Canada he is King of Canada. In each of these Dominions, he acts by, and with, the advice of his Privy Council—that is to say, his cabinet, appointed by the local electorate and legislature. In dealing with a local act, the King, or his vice-regent, is advised by his local prime minister—not by his ministers in Downing Street."

After referring to the anomalous state of the relation between Mother-country and colony, and the fact that the British instinct of government "does not occupy itself overmuch with exact logic," the *Standard of Empire* proceeded:

"Still we are not sure that there is any particular advantage in carrying illogicality and informality to the altitude it

has reached under our present Imperial system. In fact, all the articles we have recently published on Empire governance are an argument in favor of more precise methods. If the Empire is to be properly organized, it must be on something like a scientific basis, in which terms and phrases do correspond with some closeness to the reality."

This language is not very familiar in Canada. Our newspapers are, however, commencing to learn it, and the *Montreal Star*, which is enthusiastically Imperialistic, in a recent issue (24th February) has adopted it: "Canada cannot be regarded today as a colony in the old Roman sense. No one in Britain thinks of so looking upon us. We are a 'free and equal' member of the British community, with just as much right to hold our heads up as England, Ireland or Scotland. The word 'Empire' is, indeed, a misnomer. The British world is rather a league of free nations."

Canada and Australia have declined to say what they will do in case the United Kingdom is engaged in a European war. And, on the other hand, we have no assurance that the United Kingdom would take our view of any difficulty that may arise between us and, say, the United States or Japan. Twice only has the British navy intervened in colonial quarrels in British North America, and on both occasions it took part against and not upon the side of the colonials.

Official declaration of our independence declaration, it will be observed, of an already existing fact would entail many advantages, but probably the chief of them would be the substitution of certainty for uncertainty with reference to this subject of mutual support in case of war.

I was much struck with a remark recently made by Mr. R. L. Borden to the effect that our first act after declaration of independence would be to enter into a treaty of offensive and defensive alliance with the United Kingdom. In that case, both parties would acquire the immense advantage of knowing what was going to happen. At present neither of us knows, and neither of us will say. That is not only unsatisfactory and stupid, but unnecessarily dangerous. Independence will

end all that; and if Mr. Borden is right, the result will be that far from independence meaning wider separation, it will mean closer union.

In other ways, too, a frank acknowledgment of the situation will be of the greatest possible benefit. Apart altogether from the extremely important advantage of enhanced self-respect, it will give us a unity, a cohesion, and a solidarity which we have not now. At present we are English, Scotch, Irish, French, American, etc. We ought to be Canadian. Eight hundred miles of rock and water separate our east for our west. We want a bond of union. We shall never make our west Imperialistic. We can make it Canadian *now*. In a few years? I am not so sure of it.

And our establishment as a nation would have the very important effect, that it would forever end the constantly recurring question as to our destiny. There have always been people who have prophesied that when Canada came to adopt her permanent form of government she would declare for union with the United States; and as long as the question remains unsettled by accomplished fact there will always be debate and possible uncertainty as to what is to be the answer. At the present day there is probably less reason for apprehension of annexation than ever before, but nevertheless some of our best men have it still in mind, and are actually timid about increasing our trade with the United States because it might result in political incorporation.

I cannot agree that there is any ground for apprehension. If there is, we ought at once to stop the stream of American immigration into our northwest; to forbid the introduction of American capital, and industry and enterprise, and to prohibit American ownership or our resources. These influences are stronger than tariff walls. If, however, my confidence in Canadians is not well founded, the reason for apprehension is to be found solely in the fact that our political position is not upon a permanent basis. Some change has to be made. And the question is inevitable, What shall its nature be?

Other countries are not afraid of better trade relations with their neighbors or of immigration, because their constitutions have been finally adopted and definitely fixed. Our choice has yet to be made. You and I today are perhaps not agreed as to our political future.

At the present time very few would vote for incorporation with the United States. Not many years ago a great many were ready to accept it with equanimity. In a few years more? I do not know. But what I do know is that I should like to see the matter settled once and for all, while opinion is as unanimous as it is today. To leave it open is to leave it to uncertainty. To leave it open is to produce the suggestion that to conserve our political freedom we must refuse to increase our commerce with our largest business relation; that we must turn back the stream of immigration; that we must exclude American capital and enterprise. Disastrous action of that sort is wholly unnecessary. Our political future is perfectly safe as soon as we ourselves have declared what it is to be. National sentiment is the only secure bulwark of national existence. We shall never have it so long as we remain a colony.

Let our independence, then, be acknowledged. Let us learn to regard ourselves as a nation. Let us claim the place and the rank and the respect to which we are entitled. Let us be no longer a "colony" even in name, nor yet one of the "Dominions beyond the seas." We are, I beg to say, on this side of the seas. We have the most magnificent and most richly endowed country on the face of the globe. We have eight millions of the sanest, the strongest, and the most intelligent people in the world. We are acquiring a just pride in our material position and in our unprecedented progress. And if we shall only rise to the height of our national manhood, we shall, I most firmly believe, very soon be a homogeneous and united people, well able to hold our own, whether in the peaceful pursuits of industry and commerce or in the direst engagements of most strenuous war, and whether in defence of our own land or of the land

(Continued on Page 114)



HIS MAJESTY GEORGE V.

King of Great Britain and Ireland and of the British Dominions Beyond the Seas;
Born June 3, 1865, succeeded to the Throne May 6, 1910, and
Crowned June 22, 1911

Editorial

"GOD SAVE THE KING"

HIS MAJESTY KING GEORGE V, who ascended the throne on the death of his illustrious father, King Edward VII, May 6, 1910, will be crowned, by the Grace of God, King of the United Kingdom of Great Britain and Ireland, and of the British Dominions Beyond the Seas, Defender of the Faith, Emperor of India, on the 22nd day of the present month.

No monarch ever came to a throne under more auspicious circumstances or was handed the sceptre of so great an empire in the world's history.

This mighty Empire of Nations is today at peace with all the earth; and if our present King succeeds in carrying on the work so splendidly begun by the late "Victoria the Good" and "Edward the Peacemaker," he will earn the love and gratitude not only of the British peoples but of the civilized world.

That George V may be instrumental in cementing the bonds of fraternal unity between the English-speaking nations and of promoting the friendship and welfare of all others, is the heartfelt prayer of all his loyal subjects throughout the British dominions. "Long Live the King."

* * *

TIME TO CONSIDER WHAT THE DOMINION FRUIT INSPECTORS ARE DOING

RELIABLE reports in the hands of *The Fruit Magazine* justify the assertion that just previous to our going to press berries from the United States were on sale in Canada, clear from Victoria to Port Arthur, in small baskets which do not conform to the Dominion government regulations and without the word "Short" being marked thereon to inform the public that they are not legal packages as required by law.

Our reports from Eastern Canada are not to hand in time for this issue, but

last year these conditions prevailed right across from the Atlantic to the Pacific, and it is a pretty safe guess that the eastern end of the Dominion is not looked after any better than the western. What is the use of having laws if they are not enforced? Why should the inspection work be less efficiently carried out since the staff has been largely increased than it was before? Why should large consignments of foreign apples, pears, etc., be on sale throughout Canada which are not properly marked with the name of the importer, the name of the variety and a designation of the grade? Are the inspectors being hampered by their work being too much localized, or is the department getting weak-kneed?

* * *

THE LEWIS WOODPECKER

A BRITISH COLUMBIA fruit-grower recently sent two specimens of the Lewis woodpecker to the office of *The Fruit Magazine* for identification and what information we could give as to its habits. In the letter which accompanied the dead birds, the writer complained that they had destroyed much of his ripe fruit last fall, but could not make out what they found in the trees at this season of the year.

This is another case of mistaking a friend for an enemy. While this active little feathered friend may be tempted to sample a few ripe apples to the annoyance of the fruit-grower in the fall, during the rest of the year his food consists of acorns, beetles, grasshoppers, caterpillars and all manner of noxious insects.

Lydekker's New Natural History says: "The Lewis woodpecker (*Asyndesmus torquatus*) is an inhabitant of Western North America, extending into Arizona and Western Texas, and is remarkable for the structure of the body-plumes of the under-surface, these being hairy in appearance, owing to the want of barbi-



HER MAJESTY QUEEN MARY

Born May 26, 1867, married to the present King July 6, 1893

cules or hooklets to the web of the feathers. Its habits are also somewhat peculiar; and it is one of the few species in which the color of the male and female is exactly alike." Dr. Coues writes: "This is chiefly a bird of the vast forests that clothe most of our mountain ranges with permanent verdure. My own experience with the bird in life is confined to the vicinity of Fort Whipple, in Arizona, where it is a very common species—a bird of singular aspect, many of its habits are no less peculiar. One seeing it for the first time would hardly take it for a woodpecker, unless he happened to observe it clambering over the trunk of a tree or tapping for insects in the manner peculiar to its tribe. When flying, the large, dark bird might rather be mistaken for a crow-blackbird; for although it sometimes swings itself from one tree to another, in a long festoon, like other woodpeckers its ordinary flight is more firm and direct and accomplished with regular wing-beats. It alights on boughs in the attitude of ordinary birds, more frequently than any other American woodpecker except the flicker, and, with the same exception, taps trees less frequently than any."

* * *

PNEUMATIC WATER LIFT

IN the March number of *The Fruit Magazine* (Page 379) we gave a very full description of the Pneumatic Water Lift, which we consider will eventually revolutionize irrigation work where a gravity system is not practicable.

The Pneumatic Water Lift & Land Company, of The Dalles, Ore., with a branch in Vancouver, B. C., recently made a test of the machine at Blalock, Ore.

By operating the device at a speed of six revolutions to the minute it was possible to raise 800 gallons of water 65 feet a minute. At a speed of 25 revolutions a minute the device threw so much water that it could not be carried off through the mains that had been put in place leading from the machine on the bank of the river to the ground sought to be irrigated. At present the machine is driven by a gasoline engine, but it is the purpose of the company to attach a cur-

rent wheel to it and utilize the power of the river to operate it, thus reducing the cost of power to the minimum. At the point where the device is set up, there is sufficient current in the stream to give a velocity of six revolutions a minute, apparently all that is required.

The pneumatic lift consists of a drum seven feet in diameter and 16 feet long. Around this drum is a double steel tube 10 by 13 inches, open at the outer end of the cylinder and discharging into the stand pipe at the inner end. As the cylinder revolves these tubes dip up the water and fill with air alternately, carrying it toward the stand pipe, where it is forced upward by the air pressure, without the use of a pump, one foot for every four feet length of tube. The machine at Blalock has 360 feet of coil tube, therefore has a lifting capacity of 90 feet, although so far it has been tested only to 65 feet.

* * *

"THE FRUIT MAGAZINE" AND BRITISH COLUMBIA FRUIT AS IMMIGRATION AGENTS

Aberdeen, Scotland, May 7, 1911.

Editor *The Fruit Magazine*, Vancouver,
B. C.

Dear Sir,—Allow me a small space in your valuable magazine for the purpose of expressing my views on British Columbian apples, and also, if possible, to ask a little kindly information, if it be in your power to give.

For six years* I have been in the employ of a firm of wholesale fruit salesmen, whom I consider one of the largest brokers in Scotland, and one which deals largely in high-class fruits of all varieties. They import large consignments of British Columbian, Eastern Canadian, American and South Australian apples every year, but for really high-class and honestly-packed fruit, the former stands alone.

At a flower show held here recently, there was a fine exhibition of British Columbian fruit, and while standing admiring the exhibit, I overheard many opinions given, which I'm sure would have made the growers feel very proud of their fruit if they could have but heard the praises showered upon them, for really the exhibit was a credit to your province.

Since the first time I got your magazine, I had a fixed idea in my head to learn the fruit-growing, and of all the fruit-growing countries I could think of, not one appealed to me like British Columbia.

I am twenty years of age, and if you could give me an idea of the wages to be had there, and also of the opportunities for a young fellow who would like to get on in the world, I would be very much indebted to you.

If you think fit to reply, either through your pages or by post, I would be quite willing to remit a fee according to your custom.

Wishing you and your magazine every prosperity, and thanking you in anticipation, I am, Yours sincerely,

"SCOTTY."

P.S.—Enclosed please find address card if you feel inclined to reply by post.

The Editor's reply: The opportunities in British Columbia for a young man "who would like to get on in the world," by dint of hard work and careful attention to local conditions, are good. Men who are capable and understand their work get from \$2.50 to \$3.00 a day on fruit farms, and if they want board in-

cluded, the wages run all the way from \$25.00 to \$75.00 a month, according to the class of work and the skill of the employee. Men who understand the driving and care of horses are most in demand. Green men have to accept moderate wages until they learn the business.

Those looking for positions on fruit farms should not buy tickets through to the coast cities unless they have secured a position in advance, because the local fare back to the large orchards of the interior valleys is high, and often much time and money are wasted. The arrangements for receiving and distributing laborers are far from being perfect, and there are more men now on the coast than there is room for, while the Okanagan, Thompson, Spallumcheen, Similkameen, Kettle, Kootenay and Columbia valleys are most in need of men in the order named. The man who is willing to do anything in the shape of honest labor will soon find what he likes best, if he goes where the work is, and not to the cities. British Columbia is the largest, least populated and most westerly province of the Dominion of Canada. It contains about 2,000,000 acres of land capable of growing fruit, and 100,000,000 acres of agricultural land. It has all kinds of climates, except strictly tropical, within its borders.

The Cost of Living

AS the years go by and prosperity smiles upon the Dominion of Canada, the people are disposed to raise the standard of living and indulge in all manner of extravagant pleasures. Consequently, wages and prices of food and clothing have advanced, and a cry goes up from all classes about "the high cost of living," when, as a matter of fact, a little reflection on "the cost of high living" would be more to the point. We commend this matter to the consideration of readers of *The Fruit Magazine*.

On the subject of "The high cost of living *versus* the cost of high living," the "Woman's Home Companion" for May has an article from which we gather

some food for thought on this subject. The article follows:

Despite their similarity of sound and the fact that they both bear directly upon the finances of the average household, the two phrases which form the title of this article are wide apart in meaning. Under existing economic and industrial conditions, the high cost of living presents a problem too intricate, too profound for the housewife to solve. On the other hand, the cost of high living is a problem so simple that no wife and mother need have hesitation in attacking it.

The high cost of living must be reduced for the home-maker by powers outside her family circle, and the process

will be retarded by political red tape. The cost of high living can be reduced by the home-maker in a single family conference.

Reducing the high cost of living is a national problem. Reducing the cost of high living is a purely personal and individual one.

The term "high living" is elastic and comparative. To the average mind it means the social game madly played, late hours, dissipations of every sort, convivial company, rich viands, rare vintages; in short, "the pace that kills." In reality, a family that never touches wine, to whom pate de foie gras is an unknown table quantity, and whose wildest dissipation is a dance given by "father's" lodge, may be guilty of "high living." As a national evil, "high living" is more generally expressed in the term "living beyond their means," and more tersely in the short and ugly word "waste." It is no respecter of location, education or income. Springing from discontent it thrives in any soil.

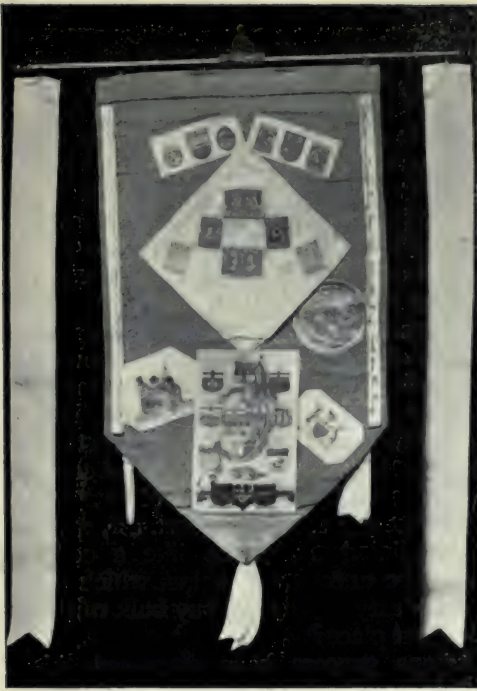
In discussing the little phrase "cost of high living" we want to identify it with "waste" as it exists in the home of moderate means. Folly causes waste among the idle rich; ignorance causes it among the wretchedly poor. But in the home over which there presides an apparently intelligent, earnest woman, why should there be waste? Because intelligence and earnestness go down before three factors of modern life—*haste, false values* and *false pride*. The little leaks which in the end represent the cost of high living can be traced to one of these three causes. Of late years the woman has adopted the slogan of her husband and son, "Time is money." She seizes upon every time-saving device. She rushes her housekeeping as her husband rushes his employees. The result is a peculiar form of high living in the home that did not exist when more time was given to its management.

Take the single item of marketing. Investigators have reported that only one-third of the housekeepers in our cities and towns do their own marketing. The other two-thirds entrust it, save on special occasions, to servants, children and the

telephone. In the average town where the telephone service is unlimited, three-fourths of the ordering at butcher shops and groceries is done over the wire. Dealers all approve the telephone method because it is a time-saver for them as well as the customer. Many of them maintain that it is fully as economical for the housewife, but actual investigation proves that this is not true. The housewife who selects her meats and green vegetables with personal care and discusses comparative prices of different brands in groceries saves from five to fifteen per cent. on her orders. These figures were furnished by representatives of three reliable firms in as many typical cities, and the same figures have been found to hold good in smaller cities and towns. Yours may be the exception to the rule, but find out for yourself if this is so; don't take anybody's word for it.

The housewife who orders hastily by telephone may not learn that, on this particular day, lamb is lower in price than it was yesterday, while chicken is higher. But if she goes to the shop and inquires about the scale of prices, she will discover which meats are the more economical on this particular day. Prices fluctuate the same way in fruits and vegetables. A bad storm blocking the traffic may drive up the price of oranges, but because the wholesalers handling bananas were overstocked there is no rise in the price of bananas. A frost may have driven up the price of peaches when early grapes are glutting the market. It is waste to buy oranges when traffic conditions send the price soaring, or peaches when they are "up" and grapes are "down."

A man does not buy stocks without studying the entire market, but a woman tells a tradesman over the telephone to send her a dozen of this, a quart of that and a basket of the third commodity without ever looking up the market quotations for the day. And she tries to figure that because she did not stop to dress and go to market she has somehow saved time that means money. The next question: "How does she use this time? In reducing the running expenses of her kitchen by good management and personal supervision? By stopping small leaks in pan-



TWO BANNERS EXHIBITED AT THE FIRST CANADIAN NATIONAL APPLE SHOW
BY MRS. W. J. GRAHAM, WOODWARD, B. C.

try and laundry?" Alas, this also takes "time."

An appalling form of waste in the kitchen today is represented by the purchase of prepared or ready-to-serve food. Naturally, it is much easier to serve cold ham, corned beef or bologna which has been cooked and sliced at the delicatessen shop than to prepare it, but consider what it costs the family purse!

Sliced and cooked ham costs on an average of forty-five cents a pound. The same grade, purchased raw, at a butcher's shop costs twenty-five cents a pound. Allowing one-fourth for fuel, shrinkage and waste, ham cooked in the home kitchen costs, when sliced and cold, thirty-three and one-third cents a pound. Here is a saving of eleven and two-third cents a pound. If cooking is done on a coal-range, the cost of fuel is infinitesimal.

A pot of beans that will furnish the main dish at luncheon for a family of four costs twenty-five cents at a delicatessen shop. The same amount of money invested in dried navy beans, salt pork, molassés and fuel will represent the main dish for three meals.

Spaghetti or macaroni bought at a de-

licatessen shop costs nearly double the same quantity prepared in a home kitchen, and the best argument for the increased cost of such bakestuffs as cakes, cookies and doughnuts lies in the fact that women who supply exchanges with such wares made in a private kitchen clear a neat profit!

The delicatessen shop has its mission. It is wonderfully convenient in the emergencies which are and must be a factor in every housekeeper's busy life. It is particularly a blessing to the woman who works for her living and yet desires to maintain a home of her own. But it is a modern convenience greatly abused by thriftless housewives and by unscrupulous servants whose business it is to prepare food in the family kitchen. The growth of the delicatessen shop in the small cities and towns shows that the home-making woman, as well as the gainfully employed woman, has yielded to its temptations and established it as one feature in high-living among those of moderate purse.

We believe that the housewife has the right to employ every labor-saving device that will shorten her hours in the kitchen,

but when she closes the door of her kitchen and lets her fire go out, she is saving a little time and wasting actual cash. Unquestionably the gas or oil stove is largely responsible for the housewife's tendency to buy delicatessen-shop food. She balances the extra cost of such products with the saving in gas or oil. But this does not alter the fact that both she and her family must lose in both nourishment and savor when she serves food that is prepared outside her kitchen and hastily warmed over.

Another feature of modern housekeeping which is often abused is the package commodity. Not even the most loyal advocate of package goods will contend that foods bought in package form are less expensive than when bought in bulk. Even allowing for the short weight by clerks, shrinkage from contact with the air, spilling, etc., bulk goods cost less than package goods. Chipped beef, which is priced at from thirty to forty cents in bulk, costs the housewife from forty-nine to fifty-one cents in box, carton or jar. Shredded codfish selling at ten or twelve cents in bulk brings thirty-two cents per pound in package form. Sliced bacon costing twenty-eight cents a pound when bought in bulk of your butcher, ranges from forty-one cents to fifty-two cents when done up in dainty, sanitary boxes or jars. You can buy bulk oats at four and five cents from the grocer's bin or pay seven or eight cents for them in a tidy package.

The superiority of the package article is not to be questioned. As a rule, first-class package goods are to bulk goods what A1 cuts of meat are to cheap ones. Each housewife must decide for herself whether she can afford to pay for the finer flavor and more sanitary condition of package goods. Nor does her responsibility end here. Having paid for sanitation and flavor it is a matter of household economy to see that both are preserved in her kitchen. To pay for a sanitary, moist and dustproof carton or wrapper and then to permit a careless servant to abuse the protection thrown around the higher-priced food is a common form of extravagance in the mismanaged kitchen.

Study for yourself the grocery closet in a thriftless home. Here is the lid off a tin box half filled with crackers. The housewife paid eight cents extra for the protection afforded by the tin box. When the lid is not fastened tight, moisture, dampness and the flavor of other groceries ruin the taste, and reduce them to the level of bulk goods. The eight cents extra has been wasted.

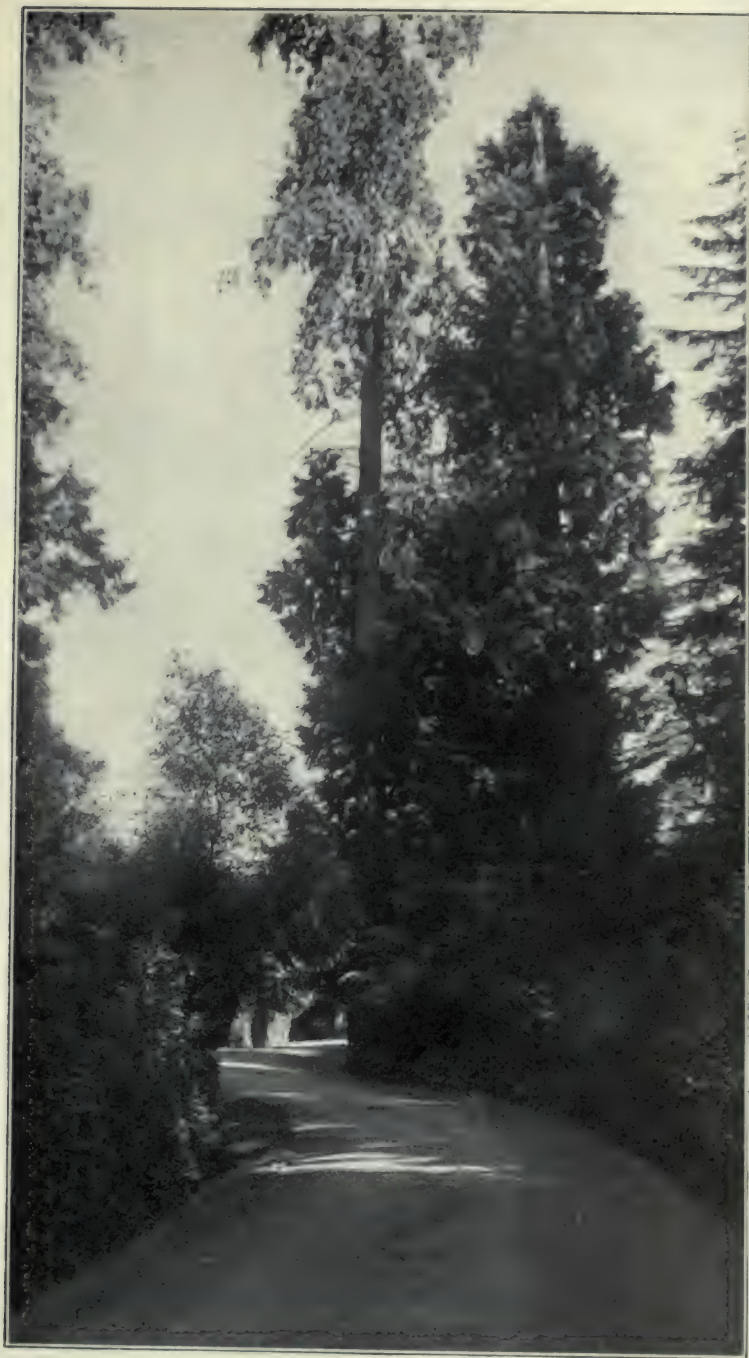
A carton of breakfast food with its interlining of moisture-proof paper shows a great hole, gouged in one face, through which the servant pours the cereal. That hole is large enough to admit moisture, dust and mice. An air-tight box of cooking raisins with moisture-proof interlining had the pasteboard top torn off, while the interlining stands up like a cellar around the uncovered raisins, which are dry and dusty. Why not buy bulk raisins in the first place?

Various grocers have discussed this question, and declare the unthinking housewife does not pay for food-protection, but because she likes the appearance of the wrapper! Even when explicit directions are printed on box or carton, she is very apt to ignore them and open the package in such a way that all protection is destroyed. Here lies real extravagance in package goods.

False values affect the cost of living in every corner of the home, in both food supplies and clothing. Ask any reliable grocer or butcher about "sales" in food-stuffs, and he will tell you that they represent not economy, but actual waste. Here are a few examples:

A certain grocer advertised cranberries at ten cents a quart when all his competitors were selling them for twelve. Housewives flocked to his "sale." They did not measure his "quart" in their own kitchens with a standard quart cup, dry measure. They did not realize that he sold them a quart, liquid measure, which runs shorter than dry measure, and that the cranberries sold for twelve cents, dry measure, were cheaper.

Another dealer announced a "sale" of evaporated apples, "finest package goods." The packages were attractive and when opened were apparently filled to the brim. But if the apples had been



VIEW IN STANLEY PARK, VANCOUVER, B. C.

poured out into a bowl, the housewives who patronized this "sale" would have discovered a tightly fitted pasteboard box or false bottom, which reduced the contents of the package nineteen per cent. and made the "sale" apples more expensive than those of a standard packing company at a higher price.

Still a third grocer announced cut prices on canned goods. Women bought them by the dozen, only to find that both succotash and peas were just a trifle sour. The grocer refused to make good "safe" articles. His competitors knew what every housewife should know, that the "specials" were what are called "seconds" and the product of a former season's canning in the bargain.

"Sale lamb" greatly under-priced is pretty sure to be goat's meat, while chickens whose price per pound drops far below the retail quotation is pretty sure to have hung far too long in some cold-storage plant. Of course, if you do not mind eating goat's meat and cold-storage poultry, the low price may appeal, but do not be deceived.

It is in ready-made clothing and household linens, however, that the average woman is more apt to lose all sense of values and thereby contribute to the cost of high living in her household. There is perhaps no question more warmly discussed among women than the comparative cost of ready-made and made-to-order garments. The woman whose time is actually money to her—that is, the woman who is employed either in or away from home on wages—has no choice. She will unquestionably pay more to have her clothes made than she will for factory-made garments and receive little better value in fabric. On the other hand, the fastidious woman who has time to shop for materials, supervise a seamstress and perhaps finish off the garments herself can undoubtedly, with the same money, get more satisfactory garments as regards material, workmanship and style by having her underwear made at home than by buying the factory-made article.

A simple, neat, ready-made night-dress advertised as "nainsook, trimmed with Val. lace" was bought at a sale for ninety-eight cents. A paper pattern of the same

design was purchased for ten cents, together with five and one-half yards of nainsook at fifteen cents a yard, three yards of very attractive German Val. lace at six cents a yard, one spool of cotton at four cents, half a dozen pearl buttons at three cents; total expenditure, one dollar and eighteen cents. On the surface, the ready-to-wear garment saved its purchaser twenty cents, in addition to the labor.

But look beneath the price mark. Examined by a white-goods expert the "nainsook" in the factory-made garment proved to be a highly mercerized cotton fabric that could be purchased for seven cents a yard. When what might be described as the "coating" came off in the wash, the rather sheer-looking fabric looked decidedly coarse. One of the sleeves tore out at the second wearing, because the garment had not been properly made, and the lace frayed away from the fabric under the iron, because the raw edges of the "nainsook" had not been rolled or hemmed before the lace was inset.

Ready-made garments of this sort contribute heavily to the cost of high living. The shopper could have bought a ready-made night-dress in precisely as good materials as the one made from fifteen-cent nainsook and six-cent lace, but it would have cost more than the materials used in the night-dress made at home.

The sooner the housewife learns that she must pay not only for material in factory made goods, but wages, rent and a profit to the manufacturer, the sooner will she reduce her values to a sane basis. When ready-made garments are greatly under-priced, there is some reason which will not work for economy. White goods that have been bleached and re-bleached until they will hardly withstand laundering, mistakes in cutting or poor workmanship, are all represented by under-pricing, which is not economy.

Concerning the value of household linens, in the piece and made up, dealers differ. In stores where Al muslins and linens only are handled there is very little difference in the cost of sheets, pillow-cases and towels when factory or



B. C. E. R. TERMINALS AT CHILLIWACK, B. C.

home made. But at so-called bargain sales the unthinking shopper is apt to be badly cheated in buying ready-to-use bed-linens.

At such a sale an investigator bought a pair of pillow-cases, size thirty-two by twenty inches, for thirty-eight cents. They were placarded "Very Special Value." She then bought material for making a pair of the same size in a reliable brand of muslin for thirty-six cents. What woman would consider the making of a pair of pillows-cases worth no more than two cents?

Ah, but wait! Were the "bargain" ready-made slips worth thirty-eight cents? The shopper tried to buy pillow-casing in the piece in as cheap a grade as that employed in the ready-made articles and could not find it on the market. A white-goods expert placed the "bargain slips" under a microscope and found that they were made of cotton which had been eaten in the bleaching. The home-made slips from muslin costing thirty-six cents would unquestionably outwear the ready-made slips three times.

These instances are not intended to prove the superiority of home-made clothes and linens over the factory out-

put, but to show the housewife that true values are not indicated by price marks. She can buy high-grade goods ready-made, but she must pay for them. It is for her to decide whether the time she would spend making them up is worth the difference in price or in fineness and durability.

Admitting the progress in domestic arts, the transfer of the loom from the home to the factory, the impossibility of making soft soap in a city apartment, even the superiority of the modern, sanitary bake-shop over the old-fashioned brick oven, does the time saved to the housewife by these changes increase or decrease the family expenses? Is the time thus saved really money in the family purse? And how is this precious time as a rule employed?



SELLING LOTS BY AUCTION AT CHILLIWACK, B. C.

Answering the last question first, an appalling proportion of the time goes into the game of keeping up appearances, the biggest item in the scheme of high living.

In considering this phase of waste, readers must bear in mind that we are dealing with the financial problems of the family whose income ranges from one hundred to three hundred dollars a month, the family who knows neither the pinching dread of poverty nor the recklessness of great wealth. In such households, keeping up appearances generally forms the heaviest item of so-called living expenses. Novelists, dramatists and muck-rakers have all painted the situation in vivid colors, but the average wife and mother still turns her back on the picture and refuses to be warned. Seeing only what she calls the "prospects" of her children, she robs



VIEW OF CHILLIWACK, B. C., FROM THE SOUTH

Peter to pay Paul—and lays her shortcomings at the door labelled “the high cost of living.”

Shopping, entertaining, every phase of social life, even preparation for marriage, have been revolutionized that the modern girl may hold her own in the game of keeping up appearances. Here are a few incidents which illustrate this tendency.

Heard at a family breakfast-table:

“John, we must have a telephone put in.”

“I think it’s an unnecessary expense, dear.”

“Well, you might as well be off the earth as not to have a ’phone these days. Nearly all invitations are telephoned, and if you haven’t one, you don’t get the invitations. For Betty’s sake we must.”

And “father” yielded.

Bruce, a junior in the local high school, enters a family council.

“Father, let me have some cash, will you? I’ve got to have a carriage to take Belle Gilman to the frat dance.”

“Doesn’t the street-car pass her house and the hall?”

“Yes, but you can’t ask a girl like Belle to go in a street-car.”

“Oh, can’t you? Your mother went to many a better dance with me—afoot.”

Exit father without further argument, but mother postpones paying the dress-maker in order that Belle Gilman, whose father is a trifle higher in the social scale than her son, may ride ten blocks and back!

The clerk is displaying various bolts of shoddy silk in prevailing colors to a mother and daughter.

“I’d advise you, madam, to buy the better grade of messaline. These novelties soon become slazy and mussy.”

“Oh, well, it doesn’t pay to buy expensive goods for evening frocks. A girl can’t wear the same dress more than half a dozen times. People begin to think it’s the only one she has!”

Shades of our ancestors, whose satins, brocades and “Bonriet” silks were handed down to the next generation!

Then take entertaining! A picnic is now pronounced bourgeois and a taffy-pull “kid-fun.” Girls of sixteen to eigh-

teen give dinners followed by bridge, for which “mother” racks her brain and drills huge holes in the family income. Instead of an old family servant passing lemonade and cake in a sun-bathed parlor, you find artificial lights, an elaborate tea-table over which an expensively-gowned young matron presides, flowers, and girls in semi-evening frocks and long gloves at four in the afternoon.

The girl whose mother went to dances and concerts afoot, hidden by cloak and hood and carrying her dancing slippers in a bag, must have her cab, because her evening cloak is a mockery of silk and chiffon, her head-covering a mere scarf of filmiest lace.

The daughter of a mother who wore flannel and chambray skirts, wears convent-made lingerie and factory-made silk petticoats!

The mother who, with her mother’s help, wrought her own bridal trousseau, buys her daughter’s wedding finery, because the daughter is so absorbed in the social functions which precede a modern wedding that she has no time to sew!

All this comes high, from the hothouse flowers on the debutante’s afternoon tea-table to the showy hand-wrought lingerie of the bride-to-be! It is all part of the profitless game of keeping up appearances, the cost of high living which today amounts to a national menace.

And it all can be traced directly to another national weakness—false pride. Tradespeople and servants wax fat and prosperous on it. The average wife and mother with ambitions for her children guards sacredly the exact amount of the family income. To have the wall-paper in her parlor strictly up-to-date and her daughter’s finery in the prevailing mode she and her husband will sacrifice much in their own personal expenditures. That her pretty daughter may attend a private school quite beyond the family income or social position she will secretly bake and brew for the local “exchange.”

Moreover, the average woman has not learned the real difference between economy and meanness. She lets tradespeople cheat her, because she hates to be considered “cheap.” And how well does the tradesman, especially the foreign



HOPE, B. C.—A CITY IN THE MAKING

dealer, know this weakness and how often does he play upon it! He sends her unripe melons or over-ripe berries, and when she demands that the fruit be made good or her money refunded, he shows such contempt for her "smallness" that she never asserts herself again.

"Mrs. Jones'" thriftless, unscrupulous servant resents her presence in the kitchen. "No lady," says this airy hand-maid, "ever noses around a refrigerator or doles out supplies."

And so the mistress of the household retreats, fearing that her "Molly" will tell "Jennie," who works for the fashionable "Mrs. Wilbur," that "Mrs. Jones" is "cheap," and the Jones' income is so small that they "bite" a cent before they spend it.

The high cost of living is a serious problem today, but is it as serious, as dangerous a menace to home life as the cost of high living? Men have always proven that when patience ceases to be a virtue they will rise and assert their rights. The day is at hand when voters will demand definite legislative action against the excessive and unnecessary high cost of living. But how many men are capable of

dealing with their individual domestic problems? Most of them prefer to work a little harder, put forth greater effort, rather than cross their wives and daughters. In fact, the average man considers his wife a rather superior creature who will somehow eventually work out the problem of keeping up appearances and living within his income. Many a capable and conscientious woman is doing just this.

It is not to her that the shafts in this article have been aimed. But we are forced to believe that she is the exception, not the rule. The tendency to try to regulate the income by the expense rather than the expense by the income is a growing one. For the most part the husband trusts the wife to make both ends meet in running the house. This very confidence of the absorbed and generous man



FIRST STEEL RAILS INTO HOPE, B. C.

ought to have the desired effect of making the wife and mother ask herself seriously:

"Are we wrestling with the high cost of living in our home—or the cost of high living?" —o—

Two Scotchmen staying at a third-rate hotel in London discovered that the washstand in their bedroom was minus soap. After ringing the bell, an attendant appeared and asked their wishes. "Sen' up sape, lad—a wee bit sape, quick!" exclaimed one of the Caledonians. The attendant gazed open-mouthed at the two men, muttering: "They ain't French, nor German, nor yet Spanish. What can they want?" The Scot became angry. "Man," he thundered, "can ye no' understan' plain Scotch?" The attendant promptly withdrew, and returned with a bottle and two glasses.



THE SAFE BEING CONVEYED INTO THE FIRST BANK AT HOPE, B. C.

CANADIAN INDEPENDENCE

(Continued from Page 100)

from which most of us have sprung, and which yet retains (may it always retain) our sympathies and our affections.

Before closing I should like to mention the names of some of the men by whom Canada has been led from squalid and ignoble colonialism to the very verge of splendid nationalism.

And I must first give you the names of Louis Joseph Papineau and William Lyon Mackenzie. Not that I would have you understand that I approve of all that those men did, for I do not; but I do say that but for their protests against government by such governors as Sir Francis Bond Head, and but for their assertions of our right to govern ourselves, the introduction of responsible government would almost certainly have been indefinitely postponed.

The next name that I shall give you is that of Lord Durham. I do not ascribe unqualified praise, as is somewhat usual, to his famous report. On the contrary I regard some of its recommendations as mistaken. But so far as he referred to the constant state of quarrel between the Assemblies and the Governors, and to the necessity for the introduction of responsible government, he was undoubtedly right. He said: "The powers for which the Assembly contended appear in both instances to be such as it was perfectly justified in demanding It is difficult to understand how any English statesman could have imagined that representative and irresponsible government could be successfully combined."

Next I mention Lemuel A. Wilmot, of New Brunswick, and with stronger emphasis the great Joseph Howe, of Nova Scotia, whose magnificent championship of responsible government will always give him an honored and important place among the builders of Canadian nationality.

Then I cite Robert Baldwin, who forced the hand of Lord Sydenham, and who, in conjunction with Sir Louis Lafontaine, won a most important victory over Sir Charles Metcalfe in connection with the right of our government to appoint its own officials.

And next Sir John A. Macdonald, Sir

George E. Cartier and Sir A. T. Galt, who, in 1859, told the Colonial Office that it would have to take charge of the whole government of Canada if our tariff bill was disallowed. Afterwards, in 1866, Sir John attempted a splendid *coup* when he proposed that our constitutional title should be "the Kingdom of Canada" instead of "the Dominion of Canada," a proposal that was rejected by Lord Derby for fear of affecting the supposed susceptibilities of the United States. And Sir John did well when he inserted in the Speech from the Throne delivered to the first Federal Parliament (1867) congratulations upon the passage of the Federation Act, "under the provisions of which we are now constituted, and which has laid the foundation of a new nationality."

And next, Sir Charles Tupper, to whom we are indebted for various things: leadership in the refusal to subscribe to the British navy; the institution of a Canadian flag; the right to negotiate our own commercial treaties, etc.

And next, Edward Blake who withstood the claim of the Governor-General to exercise the prerogative of pardon and to disallow provincial legislation.

And next, Messrs. Fielding and Brodeur, who carried our right to negotiate our commercial treaties to completion; and Mr. Sidney Fisher, who terminated our legislative disability in connection with copyright.

And next, Sir Wilfrid Laurier. Few know the full extent of our debt to Sir Wilfrid. I shall not attempt a statement of it. His work at the Colonial Conference, where our political relations were often under discussion and our independence sometimes in danger, could have been accomplished only by one of the most remarkable men of our time.

These men, besides many others, are those who have built up Canada's political independence, and who have finally reduced Canadian political connection with the British Empire to allegiance to the same King. And these men were right. We would not undo one of their acts. We would not give up one of the powers which they secured for us. Let us acknowledge our indebtedness to them. And let us evince our appreciation of what they did by completing their work.

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

THE long adjournment of parliament to allow the prime minister to attend the imperial conference in London was a welcome solution of a problem that threatened more or less of a deadlock very soon. During the interval before reassembling, members will have an opportunity of further consulting their constituents. In the meantime the ratification of the reciprocity agreement is staved off. Some of the Opposition members have been talking of forcing continuous session, if necessary, after reassembling, until a general election is called and the government appeals to the country to endorse its management of public affairs and renew its lease of office for another term. On the other hand, it has been intimated that in the event of opposition being carried to an extent that amounts to obstruction, the closure will certainly be resorted to. There is a general sense of relief at the two months' truce.

Under the heading, "Reputation of British Columbia Apples," Mr. W. A. MacKinnon, Canadian Trade Commissioner at Birmingham, acting commissioner for Manchester, draws attention to a custom still prevalent in many British markets of labelling choice Canadian apples "American." An exceptionally fine show of Canadian Northern Spy apples, or Baldwins, or Kings has often borne the description "American dessert apples," "Finest American table fruit," and so on. But Mr. MacKinnon now notes an incident showing the beginning of a tendency in the opposite direction. A large display was recently made by a fruiterer at Manchester of choicest Spitzenberg apples, and in fact nothing finer had been seen in the market for a considerable time. This fruit, which turned out to have been grown in the State of Washington, was prominently advertised as "Direct from British

Columbia," and "British Columbia Spitzenbergs." When the fruiterer's attention was called to the erroneous statement he pleaded ignorance, but declared he had no intention of changing the announcement, which had proved more effective than any he could substitute—a gratifying proof of the growing reputation of the British Columbia fruit in one of the best of the British markets. Mr. MacKinnon, commenting on the incident, remarks that it is regrettable British Columbia fruit is not more largely represented in the markets of the United Kingdom. He adds that there has been an extraordinary growth in the quantity of boxed apples sold in the British Isles during the past three years. This increase is said to be accounted for in part by the rapid extension of the acreage of apple orchards in the States of California and Oregon, from which the great bulk of russets now comes, but obviously the increase of production alone is not sufficient to account for the remarkable growth of the trade witnessed; the quality of the fruit and the attractiveness of the package in which it is contained must have a great deal to do with it. While the Black Twig, Spitzenberg, Rome Beauty and other highly-colored sorts are occasionally sent, most of the boxes carry the Newtown Pippin. The American variety of this apple apparently originated on the banks of the Hudson river, from which a limited supply still reaches the Manchester market, but always in barrels. It does not appear to be grown as extensively in Canada for export as its reputation warrants, but other varieties of the pippin grown in Canada would probably be found to be well worth the trouble of producing for the British market, and exporting in the fancy package. Mr. MacKinnon goes on to say that while British Columbia fruit displayed in the box package has obtained an enviable

reputation in the British markets, shipments from Eastern Canada are still practically confined to barrels. The enquiry is frequently made by the highest class of retailers in Great Britain why they cannot get the finest table sorts of Eastern apples, such as Spy, King, Fameuse, Snow, Wealthy, MacIntosh Red and others in 40-pound boxes. They say that many householders would buy packages of that size who would never dream of giving accommodation to barrels of apples. This point, and the fact that a much greater percentage of the fruit is shown on the surface of a box than of a barrel, is much appreciated by these retailers. A grocer catering to a high-class trade consisting for the most part of wealthy city families and country houses, does a subsidiary trade in fruit. He says that during the past season he sold something over 200 boxes of apples, chiefly Newtowns, of which only some ten boxes were damaged, and the price obtained was from 14s. to 20s. a box. All fruit dealers are not yet convinced that the end of the standard barrel is in sight. Many think that the box should be gradually introduced, and that it would steadily gain in favor. Mr. MacKinnon concludes with these remarks: The objection raised at first was that the box for (Eastern) Canada apples would be a new departure, while for the Western American, New Zealand, Australian and British Columbia fruit, it is the recognized package—in other words, conservation is opposed to any change; and secondly, that if the finest fruit is exported in boxes the quality and price of the remainder of the crop will be reduced. This latter argument means, of course, only that the Canadian fruit would under the proposed system be more carefully graded than heretofore, a thing which British consumers strongly desire. The third objection is that the public are accustomed to seeing little else but Newtowns in boxes; it would be some time before the highest colored sorts would be welcomed in the smaller package. Finally the large dealers prefer the barrels, as there are fewer packages to handle. Whatever the decision, it is urged that the matter is at least sufficiently important to demand the most

careful consideration of shippers and growers, for it would certainly be most regrettable if Canada lost a valuable opportunity merely because of adherence to established methods. If there is a greater net return to be made by shipping the choicest of certain varieties in boxes, and the bulk as heretofore in barrels, the growers and all others concerned should see that the change is inaugurated, even if for the first year it does not prove so highly remunerative for them as for their competitors who have established their reputation. One thing cannot be too strongly emphasized—namely, that if the box is used, it must be reserved absolutely for the finest sorts, and for selected dessert specimens of those sorts.

Mr. E. D. Arnaud, Canadian Trade Commissioner at Bristol, England, in his last report to the Department of Trade and Commerce, says: The season for Canadian apples is practically over, and they were very scarce here in April. The only quotations offered in the local wholesale market were for Nova Scotia Nonpareils, 28s. to 30s. per barrel. Australian and Tasmanian apples were arriving, and the following prices quoted for them:

Cleopatras.....	13s. to 14s.
Jonathans.....	16s. to 18s.
Renets de Canada.....	11s. to 11s. 6d.
Ribstons.....	12s. to 13s.
Prince Alfreds.....	11s. 6d. to 12s.
London Pippins.....	11s. 6d. to 12s. 6d.
Scarlet Pearmaines....	11s. 6d. to 12s. 6d.
Bismarcks.....	11s. to 11s. 6d.

Mr. James A. Findley, cargo inspector at Glasgow, Scotland, for the Canadian Department of Agriculture, in his annual report, just published, has the following respecting apples: The Canadian apple trade with Glasgow this season has been of an unsatisfactory nature, the importations being the smallest on record for a considerable number of years; the quality also was disappointing. Up to the time of writing, barely 81,000 barrels and 15,330 cases had arrived, as compared with last year's total of 312,165 barrels and 31,843 boxes from Ontario, and 38,604 barrels and 189 boxes from Nova Scotia. There were no direct shipments from Nova Scotia, though a few hun-

dreds arrived in Glasgow via London by rail and coasting steamer. This shortage from Canada was partly met by increased arrivals from other sources, but not in sufficient quantities to supply the demand, consequently prices ruled higher on the average for all varieties than during the 1909 season. The shortage mentioned resulted in larger importations of barrel stock from various districts of the U. S. A.—Virginia, Maine and Western States. The Virginian fruit was of excellent quality; Maine Baldwins very fair, but Western State apples generally poor in size and quality. Larger quantities of box fruit from California, Oregon, Washington, etc., arrived; the Oregon Newtown and Spitz were of excellent quality and pack, and received universal praise. The condition of Canadians on arrival throughout the season was generally fair; a few parcels among the early summer fruit arrived overripe, and towards the end a small percentage indicated frost effects. With these exceptions arrivals were in sound order as a rule. The quality, as stated, was unsatisfactory; the high prices conduced to shipment of somewhat inferior grade and generally the pack was irregular, a very few parcels of choice fruit arriving. Good winter stock was very scarce; Baldwins generally lacked color. Spys throughout lacked color and keeping quality, and were also scarce. The feature of the Ontario shipments was the pack of the Norfolk fruit-growers, several of their shipments being of choice grade and quality. The Newcastle fruit-growers also placed one or two good parcels on this market; these, with a limited few smaller shippers, forwarded reliable fruit.

The box apple trade in Glasgow is one of increasing dimensions, and this year's trade indicates that Glasgow offers an outlet for a large proportion of high-class boxed fruit at all periods of the recognized apple season; boxes containing apples characterized by uniformity of size and color, with skins free from blemish and clean for the variety, fairly bold in size—but not so big nor so irregular in shape as to be deemed coarse—will return to shippers a much enhanced price over the barrel equivalent. The barrel,

Mr. Findlay thinks, will always retain its place as the popular commercial package, but very large quantities of boxes were shipped to Glasgow from United States districts, influenced, no doubt, by the scarcity of Ontario and Nova Scotia barrel supplies. Buyers are becoming increasingly discriminating regarding value of appearance, and if Ontario orchardists are going to capture and retain a portion of this high-class box trade, decidedly more scientific care of orchards and more careful selection of fruit in picking will be essential. Mr. Findlay is satisfied that an increased quantity of boxed Ontario apples can be absorbed by Glasgow, and it lies with the Ontario packers to cater for the Scotch consumer's eye as well as his palate. The popularity of the King, Spy and Baldwin is admitted on all hands, and, granting the excellence of flavor of these varieties, buyers are influenced by uniformity of size, evenness of color and cleanliness of skin. The most popular size of Oregon Newtown Pippins is from 96 to 112 apples per 40-pound case, the latter size preferred.

There were direct shipments of 1,653 boxes of apples last season from British Columbia. These arrived in good condition, and participated in the high prices ruling. One parcel from Kelowna district, composed of Jonathan, Spitzenberg, Yellow Newtown Pippin, McIntosh Red and Grimes Golden, was of excellent quality and condition.

The importations of Canadian pears to Glasgow indicate a growing demand, as 7,885 cases and half cases, and 69 barrels were imported this year, as compared with about 5,000 packages last year. Except in seasons of very plentiful crops in France and Southern England (whence a large porportion of the Glasgow supply comes) increased quantities of pears could be absorbed from Canada. Of the total receipts, all with the exception of 225 packages were carried in refrigerators round 35 to 38 degrees, and all arrived in good condition, except a few barrels of Anjou, which were decaying. The half-case is the favorite package for all varieties except Keiffers, which may safely be packed in the 40-pound

box, or even in barrels. Very large quantities of Keiffers are marketed at Glasgow from the United States, the bulk of which are sold to north and northeast coast of England buyers, who attend the Glasgow market; and indications point to an increased demand for pears, both of Keiffer and more choice varieties in coming seasons.

A slight shrinkage of over 3,000 cases of canned apples shows on the season's importations at Glasgow to date, there being 31,939 cases of apples and 150 cases pears, as compared with last year's total of 35,046 cases of apples. The various shipments arrived in satisfactory shape, little damage to cases appearing, the contents evidently being free from damage or leakage of tins. The percentage of blown tins continued at about the satisfactory average of three to five per cent. The pack of New York firms still leads Canadians in price and popularity, and buyers affirm that the former comprise better selected and higher quality fruit. The weight of fruit is also slightly in excess of the Canadian pack, with less liquid.

A Chatham, Ont., despatch says prominent Kent fruit dealers look for a bumper crop of fruit in that district. There was a good show of bloom for pears, cherries and plum trees. If the warm weather continues, with the wind in the right direction, so that the bees may work, the chances are that fruit will set very heavily. Apples were not far enough advanced to make any prophecy, but it was believed there would be a good show of apples this year. The acreage of strawberries is not as large as usual, on account of the amount of land that has been devoted to tobacco, but the plants were coming through nicely, and so were the raspberries. Peaches in the vicinity were looking very good.

A gentleman from Canada at present travelling in Egypt writes to the Department of Trade and Commerce to say that apples in Egypt at present cost two shillings each. He had recently eaten some which were of a very fine variety. He states that there is a splendid opportunity for Canadian apples in the Levant, and he adds: "These wealthy princes and people

of Egypt, who own half the Bosphorus, pay any price when they want anything. My friend seemed not the least concerned that apples should cost him 50 cents a piece." Readers of *The Fruit Magazine*, who have select fruit to ship the coming season, would probably find it pay them to look into the matter.

THE WELCOME MAN

THERE'S a man in the world who is never turned down, wherever he chances to stray; he gets the glad hand in the populous town or out where the farmers make hay; he's greeted with pleasure on deserts of sand, and deep in the aisles of the woods; wherever he goes there's the welcoming hand—he's The Man Who Delivers the Goods.

The failures of life sit around and complain; the gods haven't treated them white; they've lost their umbrellas whenever there's rain, and they haven't their lanterns at night; men tire of the failures who fill with their sighs the air of their own neighborhoods; there's a man who is greeted with love-lighted eyes—he's The Man Who Delivers the Goods.

One fellow is lazy, and watches the clock, and waits for the whistle to blow; and one has a hammer with which he will knock, and one tells a story of woe; and one, if requested to travel a mile, will measure the perches and roods; but one does his stunt with a whistle or smile—he's The Man Who Delivers the Goods.

One man is afraid that he'll labor too hard—the world isn't yearning for such; and one man is ever alert, on his guard, lest he put in a minute too much; and one has a grouch or a temper that's bad, and one is a creature of moods; so it's hey for the joyous and rollicking lad—for The One Who Delivers the Goods.—*Telephone Talk.*

It matters not how straight the gate,
How charged with punishment the
scroll;

I am master of my Fate,
I am the captain of my soul.

—Henley.

Bud-feeding Insects

By A. L. MELANDER, Professor of Entomology, Washington State College

THE fruit-grower who is just starting his orchard soon learns that his path is not as easy as it has probably been pictured to him. He must constantly be on the watch for the enemies of his trees. Irrigation problems, insects, fungi, bacteria, alkali, hard pan, spray poisoning, soil fertility, and a host of other ailments come before him like a troubled nightmare.

Among the difficulties besetting the experienced orchardist in the early spring are the bud-eating insects. Often the buds are eaten away entirely, even before they have opened. Again, when the foliage is just starting, some mysterious bug clips away the unfurling leaves. Sometimes the culprit is caught in the act of devouring the leaves; sometimes the foliage disappears without any apparent cause. Again the trees may be unharmed until their year of bearing, when their blossoms are removed in this or that way.

The following notes may help to identify the predators. Probably the commonest damage is done by climbing cutworms. These insects work only at night, hiding during the day in the soil at the base of the trees. Cutworms do not go down into the damp subsoil, but prefer the loose, dry mulch. The parent of the cutworm is a moth or miller, one of the common moths that are attracted to lights. A lantern suspended over a tub of kerosened water will destroy many of the cutworm millers. The best treatment for cutworms is to serve them with a poisoned bait. This is made by intimately mixing one pound of paris-green with twenty pounds of bran, shorts or middlings. A quart or more of cheap molasses or syrup, and if possible the addition of some stale beer will make the bait more attractive. Add enough water to work the mixture into a stiff mash, when it may be distributed a spoonful to a tree.

The cutworms are quite fond of this, and a meal seems to suffice, but unless they have gorged on the poison it is rather slow-acting, sometimes taking several days before killing the cutworm. An obvious precaution is that this bait must not be distributed in the range of chickens.

A second troublesome insect is the bud-weevil. This is one of the fashionable new pests, as nothing was heard of it until two or three years ago. There are over a half a dozen species so far brought to our attention, but all have similar habits. The bud-weevil is a quarter of an inch long, or less; is gray in color so as to harmonize with its native food plant, the sage brush. It is a snout-beetle, provided with an evident proboscis. It is sluggish in movement, does not take to the wing, and if disturbed will fold in its legs and drop. This habit of "playing possum" can be utilized to capture the marauder, for one has but to shake the young trees over an inverted umbrella to catch all the bud-weevils. It is not at all certain that spraying will help against these insects.

The sage brush has contributed another bud feeder, a plump little "leaf beetle," gray in color like the bud-weevils. This insect holds tenaciously to the leaves when shaken. It is present in the Columbia and Okanagan river valleys in this State. Another of the native insects that has recently turned bud feeder is one of the "preacher bug" family, a black, hemispherical beetle, a half inch in length, and marked with a fringe of short golden hairs extending across its back from shoulder to shoulder. This little fellow plunges into the sand when disturbed, digging in with great rapidity. Its normal food is leaves, decaying organic matter, etc., the insect acting as a scavenger. When the orchardist replaces the sage brush and weeds by fruit trees, it is not

the beetle's fault if it has to modify its food habits from a scavenger to a bud feeder.

In the Eastern States there is a large chafer known as the Goldsmith beetle. It is a common insect, and its brilliance is known to many. The Western representative of this beetle is smaller and plainer looking, a hairy insect with greenish thorax and reddish wing-covers. It is this Western chafer that interests us in this connection, for it is a destructive feeder on the blossoms of the apple. It is an irony that the young of this beetle feeds as a grub on the roots of the apple. This beetle is large enough to be seen, and unless the trees are large, can be gathered by hand—a treatment better than to resort to spraying.

Although all these insects feed on foliage or buds, swallowing what they chew, they are not amenable to the theoretical poison spraying usually advocated for biting insects. The growth of the foliage at the time of their depredations is so rapid as to necessitate repeated applications of spray. Moreover, most of the list of species belong to groups of insects particularly resistant to poison. There is a spray, however, that is useful, namely, the Bordeaux, and this should be used to supplement the poisoned bait. Bordeaux is made of bluestone and lime, a pound of each to ten gallons of water. This spray derives its efficiency from the coppery, metallic taste it gives the sprayed foliage, proving distasteful to cutworms and leaf-eating beetles.

Bella Coola Valley

By WM. GRAHAM, Sloan, B. C.

BELLA COOLA VALLEY was one of the first parts of British Columbia visited by a white man. Alexander Mackenzie viewed the Pacific ocean from the mouth of the valley in July, 1793, and yet at the present time it is one of the least known parts of British Columbia, for the valley has never been extensively advertised like other portions of the province. The valley is about 53 degrees north latitude. Although so far north, the climate is delightful, seldom ever getting to zero in the winter, influenced as it is by the Japan currents. Thunder-storms are almost unknown; fog is very rare—in fact I have never seen any close to the ground in five years, except near the mountain tops.

The valley runs about 50 miles east and west, and averages from one to two miles in width, with the Bella Coola river running the full length and emptying into the Pacific ocean at the head of Burk channel. The river teems with fish at nearly all seasons of the year.

Bella Coola valley was settled by a Norwegian colony in 1894. They are a very energetic, industrious and ambitious people, and have hewed out of the forest for themselves good substantial homes. There are now, however, a good number

of other nationalities beginning to settle in the valley. Land is being taken very fast. There is very little vacant government land available now that can be used for agricultural purposes. Land is as yet very reasonable in price, but like other portions of British Columbia, it is advancing rapidly. There is only one crop of land on this old earth of ours, and it is bound to be utilized some day.

The best pass over the Coast range of mountains is at the head of this valley, and the mail carrier has taken the mail into the interior over the summit for three years, and has never missed a trip. On the 14th of last February, the Dominion government granted a charter for a railroad from Peace river to Bella Coola.

We have all kinds and grades of soil, from the finest silt to sand, gravel and clay, with some stony land in places. It is all productive when subdued. Clover and timothy produce fine crops, and all the hardier kinds of fruits do well, such as apples, pears, cherries and plums.

Bella Coola took one of the hundred-dollar prizes for apples at the First Canadian National Apple Show.

The smaller fruits do well also, such as raspberries, currants, gooseberries and strawberries.

FIRST TO CROSS ATLANTIC

AS I continued to turn over the pages of Mr. Larned's historical compilation my eye caught the heading of Steam Navigation, and here again we find insufficient and misleading information. A long extract is taken from an American author with reference to the voyage of the *Savannah* across the ocean in 1819. Mr. Larned must surely have read what has been written and spoken on this subject for some years past. He has the transactions of the Royal Society and the public documents of Canada in his library to tell him that it is beyond dispute that a Canadian steamer, the *Royal William*, was the first to cross the ocean entirely by steam power in 1833. As a matter of fact, the *Savannah* was a sailing packet and some steam machinery was placed in her temporarily. She used steam for only a part of the voyage and sails for a good deal of the time. Subsequently she was relegated to her original condition of a sailing vessel. At the present time there is fixed to the wall at the entrance of the Library of Parliament at Ottawa a handsome brass tablet which commemorates this interesting voyage of the *Royal William* and owes its origin to the energy of Dr. Sanford Fleming. This tablet was placed in position on the 28th of June, 1894, by His Excellency the Governor General in the presence of the delegates to the Colonial Conference, the speakers of both houses of parliament, members of the government, members of the Royal Society of Canada and its associated societies, and of the venerable Mr. G. W. Wicksteed and Mr. Horace Wicksteed, one of whom was on the trial trip, and the other saw the steamer on her arrival in an English port. The inscription on the memorial brass records the fact that it was placed in the presence of so distinguished an assemblage and sets forth that it is: "In honor of the men by whose enterprise, courage and skill the *Royal William*, the first to cross the Atlantic by steam power, was wholly constructed in Canada and navigated to England in 1833. The pioneer of those mighty fleets of ocean steamers by which passengers and mer-

chandise of all nations are now conveyed on every sea throughout the world.

"Ordered by the Parliament of Canada, June 13-15, 1894."

It is to be hoped that Mr. Larned will recollect this historical fact in a new edition of his work.

—J. G. Bourinot.

THE MAN BEHIND THE SMILE

I DON'T know how he is on creeds,

I never heard him say;
But he's a smile that fits his face,
And he wears it every day.

If things go wrong, he don't complain—
Just tries to see the joke.

He's always finding little ways
Of helping other folk.

He sees the good in every one,
Their faults he never mentions;
He has a lot of confidence
In people's good intentions.

No matter if the sky is gray,
You get his point of view;
The clouds begin to scatter
And the sun comes breaking through.

You'll know him if you meet him,
And you'll find it worth your while
To cultivate the friendship of
The man behind the smile.

—W. S. Guilford.

A LAWYER was defending a man accused of house-breaking, and said to the court:

"Your honor, I submit that my client did not break into the house at all. He found the parlor window open and merely inserted his right arm and removed a few trifling articles. Now, my client's arm is not himself, and I fail to see how you can punish the whole individual for an offence committed by only one of his limbs."

"That argument," said the judge, "is very well put. Following it logically, I sentence the defendant's arm to one year's imprisonment. He can accompany it or not, as he chooses."

The defendant smiled, and with his lawyer's assistance unscrewed his cork arm, and, leaving it in the dock, walked out.

THE WOMAN WHO UNDERSTANDS

SOMEWHERE she wants to make
 you win,
 Your soul in her firm white hands—
 Somewhere the gods have made for you
 The woman who understands.
 As the tide went out she found
 Lashed to a spar of despair—
 The wreck of his ship around him,
 The wreck of his dreams in the air—
 Found him and loved him and gathered
 The soul of him to her heart;
 The soul that had sailed an uncharted
 sea—
 The soul that had sought to win and be
 free—
 The soul of which she was part;
 And there in the dusk she cried to the
 man,
 "Win your battle—you can—you can."
 Helping and loving and guiding—
 Urging when that was best—
 Holding her fears in hiding
 Deep in her quiet breast—
 This is the woman who kept him
 True to his standards lost—
 When tossed in the storm and stress and
 strife,
 He thought himself through with the
 game of life,
 And ready to pay the cost—
 Watching and guarding—whispering
 still,
 "Win—you can—and I know you
 will."
 This is the story of ages—
 This is the woman's way—
 Wiser than seers or sages,
 Lifting us day by day—
 Facing all things with courage,
 Nothing can daunt or dim;
 Treading life's path wherever it leads—
 Lined with flowers or choked with
 weeds—
 But ever with him—with him;
 Guardian, comrade, and golden spur,
 The men who are helped by her.
 Somewhere she waits strong in belief,
 Your soul in her firm white hands,
 Thank well the gods when she comes to
 you—
 The woman who understands.

—Anon.

SMALL FRUIT SITUATION IN B.C.

M R. R. M. WINSLOW, Provincial Horticulturist, reports: The strawberry crop on Vancouver Island has improved considerably in the last two weeks because of extensive much-needed rains. Reliable estimates now run from 65 per cent. to 85 per cent. in the Gordon Head district; in the Keating district much smaller crop than last year, with the plants in poor condition; and some slight frosts result in a yield of from 50 per cent. to 70 per cent. On the Lower Mainland the Burnaby district reports a slightly increased crop over last year, with prospects for a good crop in excess of last year. This district markets in Vancouver, where it has a well-deserved reputation.

There has been a heavy bloom, but much wet weather, and present prospects are for a yield of somewhere around 75 per cent. to 90 per cent. of last year's crop. Strawberry-growing has practically ceased commercially in all of the districts save the Kootenay, where the crop will be about 75 per cent. of last year. Growers feel that indications are generally that more fruit will be placed on local markets, and less go to the prairies than before.

APPLE BREEDING

WE have just received a copy of Bulletin No. 68 of the Experimental Farm Series prepared by Wm. Saunders, director of experimental farms, which deals with the "Progress in the Breeding of Hardy Apples for the Canadian Northwest." In its pages the history and present condition of this important branch of experimental work are dealt with.

The endeavor is made to place the work before the reader in such a way as to indicate its general and extensive scope. Already many useful varieties of cross-bred apples have been produced, and the indications are that improvements in the size and quality of the fruit will be more rapid in the future than they have been in the past.

A copy of this Bulletin may be had by writing the Department of Agriculture at Ottawa, Ont.

Woolly Aphis and Nursery Stock

WOOLLY APHIS will not injure the Northern Spy root and seldom attacks it to any extent. The whole root is a complete protection against this pest below ground, and the half stock also appears to be successful when properly managed. The aphis will not work down the Northern Spy stock if the soil is well packed around it, but suckers from the common root below may lead the aphis down if not quickly removed. After planting, the half stocks usually throw out roots so that the tree eventually becomes established on a complete Northern Spy root system.

The half stocks are used by nurserymen because they are less expensive than the whole root. The extra expense attached to growing Northern Spy roots and half stocks must be added to the price of the trees, but the orchardist will usually find that it pays to make the extra investment.

Where nursery stock is to be grown on common root, special precautions must be taken to avoid woolly aphis infections. The nursery should be located, as far as possible from any apple trees, and the soil had best be of a sandy texture, not adobe, which will crack. As an additional precaution, the grafts should be dipped before planting to insure the absence of aphis.

A good dip that will not injure the stock is prepared as follows:

Black leaf tobacco extract, 1 gallon; water, 30 gallons; or, black leaf 40, 1 quart; water, 50 gallons.

The efficiency of these dips is increased by the addition of 1 to 1½ pounds of whale-oil soap. In treating the stock, the best procedure will be to dip the seedlings (before cutting) and the scions separately, the stock to be drained off and partly dried before grafting. This procedure is to avoid soaking in of the dip at the cut ends of root and scion. Of course, the scions will have a cut end,

but a short piece may be removed and discarded after dipping.

The seedlings which have been received, so far, have been apparently free from aphis, but a very minute inspection would be required to say that they were absolutely free from the pest.

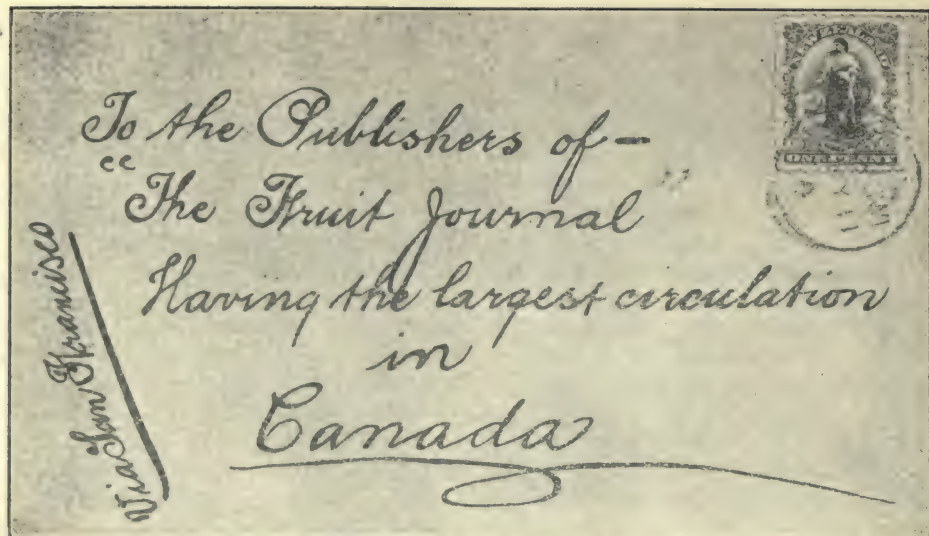
Young trees would also be benefited by dipping the roots and tops before planting, for the same reason as the grafts. The trees should be washed and then dipped just as they come from the nursery. The roots and tops to be pruned afterward. In this connection it may be well to state that some planters are not properly root and top pruning the trees they are setting. All cut or broken roots should be pruned back to live wood. The tops should be cut back to two or three feet of the ground line, and all side branches removed. These precautions are especially necessary with apricot and peach trees to prevent the drying out of the tops from killing the whole tree. The pruning should be done as the trees are being planted.

It is also advisable to plant the trees as soon after they arrive as possible. The practice of heeling in, and then setting in the orchard a month or so later, has been the cause of considerable trouble and even the death of some trees that would otherwise have lived.

INTERURBAN CAR SERVICE

THE day is fast approaching when the electric car will play a most important part in the development of the fruit districts of British Columbia and other parts of the Dominion. Many of the interior valleys of our western province afford splendid opportunities for enterprise along this line, there being plenty of water power which can be utilized from the irrigation systems in process of development.

Since the building of the B. C. Electric Railway lines through the Fraser Valley as far east as Chilliwack, it is



FACSIMILE OF THE ADDRESS ON A LETTER RECEIVED AT THE OFFICE OF "THE FRUIT MAGAZINE," VANCOUVER, B. C., MAY 29, 1911. THE POSTAL AUTHORITIES AT SAN FRANCISCO EVIDENTLY KNOW THAT "THE FRUIT MAGAZINE" IS "IT"

simply marvellous the impetus that has been given to the development of lands along the route hitherto practically worthless. One of the most enjoyable trips for a tourist may be had leaving Vancouver at 8 a. m. and arriving at Chilliwack at 12 noon over the B. C. Electric Railway, in handsome modern cars, but later the most striking feature of this route will be the freight traffic which must develop rapidly. There is just a little danger of making too large a city of Chilliwack for the size of the valley. We should much prefer to see still greater activity in the development of the small holdings into profitable fruit and vegetable gardens. Small fruits of all kinds do remarkably well in the lower Fraser valley.

THE KOOTENAY JAM COMPANY, LIMITED

MR. B. H. FOX, the managing director of the Kootenay Jam Company, Limited, has recently been on the coast and made a change of plan in regard to the future location of the company's factory.

The intention of the company, as announced, was to establish headquarters at South Westminster, but, owing to unforeseen difficulties, this proposal was abandoned and the company's factory

will now be located at Mission City, which is one of the largest small-fruit growing districts of the province. The company has purchased a valuable site on the banks of the Fraser river, and situated on both the C. P. R. main line and its branch running to Sumas and the States. The site also commands the river route.

The new factory, which is now almost completed, covers a large ground area, and has nearly twice the floor space of the Nelson building—it being of two storeys and 150 feet long by 75 feet in width. All the plant now at Nelson will be at once transferred and additional machinery added to meet the requirements of the district, there being enormous acreages of berries, etc., adjacent to the factory.

The plans of the company also include the immediate formation of the new branch for the manufacture of cocoa and chocolate, for which purpose the company has recently sanctioned a large increase of capital, and owing to the splendid strategical situation of the new factory on the main line, and the fact that Mission City enjoys terminal rates, enabling the company to obtain supplies at very low cost, the directors are confident that the two industries combined have a brilliant and profitable future in store.

BIBLE CAKE

FOR the benefit of our readers amongst the fair sex who do not mind going to a little trouble in order to make a good cake, we give below a recipe on strictly Scriptural lines.

If any of them should not be successful in their first effort, and will drop us a note to that effect, we will publish the exact words from the various passages named, in our July number:

THE RECIPE

Four and a half cups of I Kings iv, 22.

One-half pound of Judges v, 25.

Two cups of Jeremiah vi, 20.

Two cups of Nahum iii, 12.

Two teaspoonfuls of I Samuel xiv, 25.

To taste, II Chronicles ix, 9.

Six teaspoonfuls of Jeremiah xvii, 11.

One and a half cups of Judges iv, 19.

Two teaspoonfuls of Amos iv, 5.

One pinch of Leviticus ii, 13.

Directions, Proverbs xxiii, 14.

Bake one and a half to two hours.

Baking powder may be used instead of leaven.

FRUIT TREE REGISTRATION

THE American Fruit Register Association, of Sunnyside, Washington, is claiming public recognition. This is a body of strong men, organized for the purpose of registering fruit trees.

While the idea has been to do the work as individual orchardists and nurserymen, this association takes the position that there should be but one set of records for specific trees, as there is for specific live stock, and to cover this field it is the purpose to make it broadly American. In these books are registered the best fruit-bearing trees. There is an "advanced register" where only such trees are entered as have been scored according to the rules of the association and pronounced by a committee of competent disinterested men as worthy of such record.

The plan is endorsed by many eminent men to whom it has been submitted, and the character of the men composing the association seems to be sufficient guarantee that the work will be well established. The scoring committee is

Prof. Balmer and Prof. W. H. Wicks, of Idaho. The committee on council is C. A. Touneson, for eight years the secretary of the Pacific Coast Nurserymen's Association, and Prof. C. I. Lewis, of Oregon, to which other names from other states and provinces are to be added; with S. J. Harrison, of Seattle, as president, M. Horan, of Wenatchee, as vice-president, and H. M. Lichty, of Sunnyside, Wash., as secretary.

In addition to the professional work here described it is proposed to gather scions and buds from the orchards making the best records and selling these to nurserymen propagating high-class stock, and extensive scion orchards are being established where will be grown clean, strong trees of pedigreed stock, which will supply the propagating material for the grower of fancy nursery stock.

A KING

This day two hundred years ago,
The wild grapes by the water side
And tasteless groundnut trailing low,
The table of the woods supplied.

Unknown, the apple's ruddy gold
And crimson hue of peach and pear,
The mirror of the river told
No tale of orchards rich and rare.

Wild as the fruits he scorned to till,
These vales the idle Indian trod,
Nor knew the glad creative skill,
Or joy of him who toils with God.

Great Painter of the fruits and flowers,
We thank Thee for the grand design
By which these human hands of ours,
In Nature's garden, work with Thine.

Give fools their gold, and knaves their power,
Let Fortune's bubbles rise and fall;
Who plants a tree, or trains a flower,
He is a king above them all.

IN our May number the advertisement of Messrs. John J. Olsen & Bro., of Tacoma, Wash., quoted berry boxes at \$25 per thousand, which should have read \$2.50 per M. Practical fruitmen would, of course, recognize this as a typographical error.

Coronation Ode

By FELIX PENNE, Vancouver, B. C.

"God Save the King!" Don't you hear them cheering?
Don't you hear them shouting as the King goes by?
"God Save the King!" hear the people sing.
"God Save the King!" is the Empire's loving cry.

Yes, we can hear them! From our Western home
We send the cheering back across the foam.
From the Royal Presence distant many a mile
We seem to hear the voice and see the smile.
George! 'Tis a name to rouse the worn and faint.
St. George of Merry England is the Patron Saint.
Mary! 'Twas she who chose the better part.
Mary! A name dear to each Christian heart.

* * * * *

Son of a King whose soul was set on Peace,
Scion of a Queen whose blessings shall not cease.
"Peace and Prosperity" shall progress hour by hour
As flower doth follow leaf—fruit follow flower.

* * * * *

Here in this western port each tide a ship doth bring.
This sea-kissed city hails the Sailor King!

* * * * *

A wreath, then, for thy crowning we entwine—
The Rose, the Thistle, Shamrock, Western Pine.
The Maple Leaf!—and yes! in other lands
Busy as ours are deft and dusky hands,
For Afric's Palm, and India's Lotus rare,
Are sent by distant tribes thy smile to share.

* * * * *

Justice and vigilance ne'er sleep. Beneath thy sway,
In many lands, somewhere 'tis ever day!

* * * * *

Today is holiday in ev'ry British town.
We play! dance, cheer, in honor of thy crown.
We scatter roses, bid the joy bells ring,
And to the breeze the Flag of Empire fling.

* * * * *

Tomorrow cheerfully to work we go,
Each man his task—to help the Empire grow;
We swing the axe, delve with the plodding spade,
Such tasks as these have this Our Empire made.
Plant herb and fruit, and while we're working sing
"God bless our country!" and "God Save our King!"

THE APPLE TREE

IN the orchard the apple-tree boughs
 were bare,
 Tossing about in the chill spring air;
 But all through their veins crept the sweet
 full tide
 Of life, and soon blossoms were opened
 wide.
 Blossoms that hid the fine, tender green
 Of the leaves until they could scarce be
 seen,
 But the fair petals fell, and the young
 leaves grew
 To cover the secret they only knew.
 But the birds found out, and they sang it
 clear:
 "There are we baby apples rocking up
 here.
 They are growing so fast that soon all
 can see;
 You can't keep them hidden, you foolish
 old tree!"
 The children heard, and laughed as they
 played
 'Mid the clover sweet in the orchard's
 shade:
 And morning and evening they watched
 the tree,
 Counting the apples that they could see.
 The wind came by with a roar and shout.
 Flinging the laden branches about.
 "You've too great a load; it will break
 you down,"
 He said, as he twisted the tree's green
 crown.
 And he tore off apples with reckless mirth
 Pelting them down on the rain-soaked
 earth
 Where the tiny creatures that haunt the
 ground
 Within them both food and dwelling
 found.
 Yet still had the tree such wealth to bear
 That when its fruitage grew full and fair,
 The branches were bowed to the clover
 sward,
 As if in thanks to the gracious Lord.
 And the children came to the generous
 tree,
 With song like the birds', with laughter
 and glee,
 Gathering more than their hands could
 hold
 Of the tree's rich offering, crimson and
 gold.
 —E. S. A.

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Dominion Day

By SAMUEL WHITT

From fierce Atlantic's ceaseless roar,
To calm Pacific's strand;
From Erie's lake to Arctic shore,
We claim this vast northland.
Redeemed from Nature's wildest stage
By our forefathers bold,
'Twas left to us a heritage
Of priceless worth to hold.

Well may our hearts beat high with pride
As o'er this wide domain,
We cast our eyes from tide to tide,
From east to western main.
Auroral light behind us gleams
With soft yet brilliant ray,
While in our face effulgent beams
The glorious orb of day.

It is indeed a wondrous land,
A masterpiece divine,
Whose rivers, lakes and mountains grand,
To beautify, combine.
And here our fathers laid in youth,
The four great corner stones
Of justice, freedom, peace and truth,
The surest base for thrones.

Its breezes are endowed with health,
Sweet freedom scents the air,
Its rocks abound in hidden wealth,
Its fields abundance bear.
From every mountain top a view
Of loveliness is seen,
That oft is photographed anew
On lakes of silver sheen.

Its forests by soft zephyrs wooed,
Eolian anthems raise,
To Him who has made all things "good,"
A symphony of praise.
And should not also we rejoice
And swell the glorious strain,
By joining with our sweetest voice
In Nature's grand refrain?

For where, Canadians, tell me where,
Can you a country find
Whose every prospect is so fair,
Whose clouds so silver-lined?
Where Providence and Nature, too,
Persistently conspire,
To pour their richest gifts on you,
Nor do they seem to tire.

Then Canada with stately tread,
Go calmly on thy way,
There's nought on earth that you need dread,
Or can your progress stay;
Till Britain's noblest child shall stand,
Confessed by all to be—
As ruler of this mighty land—
A nation, brave and free.

The Fruit Magazine

VOL. III

JULY, 1911

No. 4

Advice to Beginners in Apple Culture

By PROF. H. W. SPARKS, of the Washington State Agricultural College

I BELIEVE that the first principal factor in successful horticulture is the man himself. I would tell anyone if he does not like the business sufficiently to give it his undivided attention not to attempt it. One can fail in this business as well as in any other. Perhaps a little more. There is nothing in the art of raising fruit that is difficult to learn, but like everything else of that kind, it requires special attention.

The next factor is to find a location where the soil, climatic conditions, market conditions and transportation facilities are right. These are all important factors. One of the first requirements of the soil is that it be well drained. The location should be a little higher than the surrounding country. Low places are inclined to be frosty. There are other conditions besides elevation that make the difference between a frosty undesirable place and a desirable one. Sometimes low places are situated near a body of water that keeps off the frosts, and sometimes air currents come through mountain passes. Go out over the land where you are considering planting an orchard on a frosty morning and see if the frost is heavy. I do not think the difference in soils is known as it should be; but, as a rule, avoid heavy, low soils. The black, humid soils are inclined to produce too much wood growth. The volcanic-ash soils are the best. Sandy loam soils are sometimes very good, but there is such a

difference in the soils that it is hard to say generally which is best. In all these matters one should be governed largely by his surroundings. If one has an orchard that is doing well and seems to be in a healthy condition, he can rest assured that the soil is good in that locality.

The next consideration is proximity to market. One can be located too far from transportation, and often the difference of a few cents makes the difference between success and failure in fruit-growing. The rule cannot be applied too strictly, because districts that are removed today, in three, four or five years from now may not be. What might not be valuable for orchard-planting now, in four or five years may be. As a rule, one should have a shipping point sufficiently close to deliver two loads at least in a day.

The next great question to decide is what varieties to plant. One can be governed by what has proven successful in a district, what is bringing the highest price, and what is in best demand. I will not undertake to name any of the varieties because of the varying conditions found in apples doing well in one place and not in another.

In Western Washington, Oregon and British Columbia we should not undertake to compete with those places east of the Cascade mountains in high colored fruits. There are many fruits that do not require color to sell. I will

mention a few. I would put at the head of the list the Gravenstein. Of course this is not a winter apple. It is standard in quality and has many desirable features which make it the best of all apples. It is not only an eating apple, but is the best of cooking apples, and is better for canning than any other. Next to the Gravensteins in British Columbia, Western Washington and Oregon comes the King. This has good quality in many respects and sells well. Next to the King is the Northern Spy, which I think is the most valuable apple there is for west-side conditions generally. When I speak of the west-side conditions, I mean in comparison with the Hood River country east of the Cascade mountains. There is one objection to the Northern Spy. It is a tardy bearer. I believe this fact can be overcome by the right kind of pruning. I have brought it into bearing in five years, and am satisfied that by right methods it can be brought into bearing early enough. Coming next in order is the Olympia Red, which is an apple of good color and quality. There is one fact about the Northern Spy which seems to be clear of the Olympia Red. It seems to stand the black-spot canker better than any other variety. Black-spot canker is one of the pests we have to combat on the west side. The Bellflower is also a good apple, but is not so marketable. It is desirable for home use. The Ortley is also good. There is another apple that should be planted more than it is. That is the Grimes Golden. This is one of the standard varieties that does not require color to sell.

The next thing is to select the trees to be planted. This question is so important I would rather pay a dollar, if necessary, for the right tree than get a poor one for nothing. If we make mistakes in the variety of fruit or kind of trees we plant, it may take five, six or seven years before this mistake can be overcome. It is not like dairying or poultry raising, where we can correct a mistake in a year or two. A tree that is well grown and has matured naturally in the ground and not been forced in any way, has stronger vitality, starts out quicker, and makes a better tree than a weak one. I am going to explain just how you can

tell a tree that has strong vitality. I prefer a three or four-foot yearling tree. I would rather pay an extra dollar, or five dollars, for a tree of that kind. The three or four-foot yearling tree that is well grown will be quite strong at the bottom, and all the way from the bottom to the very end terminal bud the buds are well developed. If the tree has matured naturally and has plenty of vitality, lying around each of the buds will be a little swelling.

The digested sap is started in the formation of starch right around that bud in the spring. As soon as the climatic conditions are right, and a few of the sun's rays strike this bark, the formation starts in the starch and that causes the leaf to grow out. As the leaf grows it makes demand for sap which comes up through the sap wood.

The first start of a tree depends upon the starch stored around the bud. Be sure and get a tree that has this indication. Sometimes nurserymen, in order to fill early fall orders, strip all the leaves off the tree to make it mature early. In such cases there would not be the storage of starch around the base of each bud. This storage of starch is deposited when the climatic conditions are right, when there have been a few frosts, and the indications of coming winter appear. The tree by nature has had warning of this end of the season, and the starch is stored there for the next spring's start. If the foliage has been stripped off early, or has been irrigated and forced along, the starch will not be there. I sometimes advise people to grow their own trees. That is the best method to get right trees, or have them grown for you by a nurseryman. I would suggest that you commence in time to select your scions growing in the district where you intend to plant. Select them from the very best bearing trees you can find. Graft these scions on to the roots yourself, or have your nurseryman do so, then you will be sure not only to have a good tree, but to have the tree you want. Sometimes nurserymen are careless and send out trees that one does not order, and sometimes this is done purposely, so if you grow trees you can be sure to have the trees you want. It may take several years.

Have your ground plowed and well harrowed. Give the ground as good preparation as possible. I have heard a great many say they would not plant an orchard until the land was thoroughly prepared. I have cleared the ground and planted trees the same year with success. I would rather plant as soon as the land is cleared than wait two or three years to prepare the soil.

The next thing is to stake out the field. If the land is rough it is quite difficult to get it exact without surveyor's instruments, but one can get very good results in rough ground. First run a line at some point where you can get as near a level line as possible, and then line right through. I have found it convenient to have all stakes prepared. I first split up some stove wood 18 inches long. The stakes need not be larger than half an inch square. After they have been pointed a little, mix some lime in water, making a thin white wash, then dip the top end into the whitewash. This makes them easy to see.

As a general thing trees are planted too closely together. If I were planting an orchard today I would not plant trees nearer than 30 feet apart. Take a nice soft piece of wire and make it just 60 feet long. Put a mark at the centre of that wire. The man at the rear stake, looking at the stake across the field, sets this 30-foot stake at the mark on the wire, and at 60 feet as he advances. He always has two stakes to look across, and the third stake at the end of the row. The reason for two stakes is on uneven ground the end stake can be seen. When two stakes are used one can go a considerable distance and not be much out of line. Sighting across the field, next establish a line at right angles with the first. For the benefit of those who do not know exactly how to do that easily, I will tell them of a very simple method. Go out six feet on one of these lines and eight feet the other way and it will be exactly 10 feet across that angle. Then you can be sure you have an exact right angle every time.

After the land is staked make a planting board about four feet long with a notch in each end, and one in the centre. When ready to plant put this centre

notch over one of the stakes, and then put a stake in each one of the end notches and take up the stake where the tree is to go, and dig a hole. Set the two stakes back and put the tree in the notch in the centre. The tree will then be where the stake was. One does not have to look in either direction. This is the most simple method that I have used. I have planted large tracts by this method. It works so perfectly that one cannot notice that it is not exact.

When digging a hole for planting be governed about the depth of the hole by the nature of the soil. I would not dig as deep a hole in heavy soil as in light soil. Set the tree, when it is planted, about an inch or two deeper than it was when in the nursery. Before setting out a tree, I would prune each root. I would not want to plant any tree that did not have from three to five strong roots, lateral roots, running out each way from the main stem. I would not plant a tree that had roots on one side. That tree would not be feeding evenly from the ground. Prune off each root that will not grow, if not more than two inches is left. I would not care to have more than four, five or six inches of the root left. Prune them off on the lower side with a good sharp knife, making a long cut. When the tree has been placed in the hole and some soil put around on top of the roots, get into the hole and tramp the soil down hard with both feet. Just as soon as the leaves have started and the demand for sap begins there is a flow of sap.

If you have any reason to believe that the soil is not rich enough, use a little nitrate of soda right around the roots of the tree. A half a pound or less will make a wonderful difference. It is as essential that one have as good a start with a tree as it is for him to have a good start with a pig or calf.

At this point I might tell you of my own experience in planting fruit trees. I had several varieties, and had prepared the land in such a way that I had not cleared off the full extent that I wanted to plant on. I ordered a certain number of each variety. I had a little pride in the matter, and I wanted to make it appear the best I could. I selected them

out, taking the best variety, and setting the best trees next to the road where they would show the most. In after-years, I do not think one of those trees at the end of the row survived. They were weak, attacked by insect pests and climatic conditions, but every one of those first choice trees produced a good tree, and I believe that the first third of each one of those rows produced more fruit than the remaining two-thirds. My wife had considerable poultry, and we saved the droppings all through the winter, keeping them in barrels so that nothing was lost. We also saved wood-ashes gathered from the burning log heaps and mixed them together and used it around the trees, as we got just as good results as with nitrate of soda. Then put on your surface soil. Do not do much packing, so that it will not bake or dry out.

The next thing to determine after the trees are planted is what top to start the tree with. There are many places where a head reasonably high is much better than a low head. The tree needs plenty of sunshine. Damp weather and misty conditions are conducive to fungus and black-spot canker. These pests seem to thrive under these conditions. The sunshine will dry them up and kill them. Where there is not enough sunshine the trees should be headed up high enough so that the air will circulate freely around under the tree and the sun get down there once in a while. This makes it much easier to cultivate. Having decided the head of the tree after it is planted, cut them off uniformly to that height. If there is a strong prevailing wind, set the tree on the slant a few degrees toward the wind.

I do not know that there is any other method that will do as much as cultivating the land. I believe it is just as well to put in some kind of a crop, but never a grain crop. I have seen a number of fairly good orchards and as soon as they got a little too much seeded down to clover, they never did as well. Be careful to take care of an orchard from the start.

We can understand the ease with which a fool and his money are parted, but what puzzles us is how the fool got the money to part with.

CANADA TO ENGLAND

Sang one of England in his island home:
 "Her veins are million, but her heart
 is one";

And looked from out his wave-bound
 homeland isle

To us who dwell beyond its western
 sun.

And we among the northland plains and
 lakes,

We youthful dwellers on a younger
 land,

Turn eastward to the wide Atlantic
 waste,

And feel the clasp of England's out-
 stretched hand.

For we are they who wandered far from
 home

To swell the glory of an ancient name;
 Who journeyed seaward on an exile
 long,

When fortune's twilight to our island
 came.

But every keel that cleaves the midway
 waste

Binds with a silent thread our sea-
 cleft strands,

Till ocean dwindles and the sea-waste
 shrinks,

And England mingles with a hundred
 lands.

And weaving silently all far-off shores

A thousand singing wires stretch round
 the earth,

Or sleep still vocal in their ocean depths,
 Till all lands die to make one glorious
 birth.

So we remote compatriots reply,

And feel the world-task only half be-
 gun:

"We are the girders of the ageing earth,
 Whose veins are million, but whose
 heart is one."

—Arthur J. Stringer

B. C. Fruit-growers' Association Directors' Meeting

A MEETING of the directors of the British Columbia Fruit-growers' Association was held in the Board of Trade Rooms, Kamloops, B. C., June 3, 1911, being called to order at 11 a.m.

The following members of the directorate were present.

R. H. Agur, president, in the chair; W. F. Somers, T. D. Wood, W. N. Shaw, J. C. Metcalfe, R. C. Abbott, A. Unsworth, R. M. Palmer, F. D. Nicholson, W. C. Ricardo, T. Abriel, J. Rooke, J. Johnstone, J. Compton, R. M. Winslow, secretary; W. E. Scott, Deputy Minister of Agriculture, ex-officio.

The secretary read the minutes of the directors' meeting January 7, 1911, which were declared approved.

The minutes of the last executive meeting, May 17, 1911, were also read, to better inform the directors of the progress which had since been made.

The President asked for discussion on the present situation. Mr. James Johnstone, of Nelson, stated that in his opinion more publicity was essential of the present attitude of the British Columbia fruit-growers, as Eastern Canadians had been led to believe that we favor reciprocity, just as had the press reports been influenced to make their opinion appear favorable. He favored more publicity of our attitude. A resolution prepared by the Resolutions Committee was then read. Mr. T. Abriel, in moving the resolution, commended its form, its brevity and strength. Mr. W. C. Ricardo stated, as a member of the Resolutions Committee, that it was their endeavor to have the resolution a concise record of the opinion of the directors. He seconded the resolution, which was carried unanimously. The resolution follows:

Whereas there has been introduced in the Federal House a bill to promote re-

ciprocal trade with the United States; and

Whereas the proposed reciprocal agreement will permit free trade in fresh fruits and vegetables; and

Whereas the proposed reductions in duties will have the effect of reducing the prices of our products in Canadian markets.

Be it resolved that we, the directors of the British Columbia Fruit-growers' Association, put ourselves on record as condemning the proposed reciprocity agreement between Canada and the United States as being detrimental to the fruit industry of British Columbia.

And be it further resolved that copies of this resolution be forwarded to the Minister of Agriculture of British Columbia, to the Boards of Trade of the province, to the Agent-General of the province in Great Britain, to all the members of the Dominion House from British Columbia, the press generally and the Federal ministers of agriculture and finance at London.

After considerable discussion of the general influence exerted by the attitude of *The Fruit Magazine* on reciprocity, during which discussion the directors spoke of their desire to protect the editor personally in any action they might take, the following resolution was passed:

Whereas *The Fruit Magazine* has expressed strong views in favor of the proposed reciprocity agreement, in opposition to the expressed views of the great majority of fruit-growers of British Columbia and of this association; and

Whereas *The Fruit Magazine* is the official organ of this Association.

Be it resolved that a copy of the resolution on reciprocity be sent to *The Fruit Magazine*, with a request that it be published.

And be it further resolved that in the unanimous opinion of the directors of the Association here assembled

The Fruit Magazine should cease to be the official organ of the Association.

The following resolution was then passed: "That the secretary be instructed to ascertain from *The Fruit Magazine* whether the resolutions on reciprocity and the attitude of the magazine will be published in the next issue, and to notify the executive of their expressed intention." Carried unanimously.

Re Labor—Mr. Unsworth stated that in his opinion the Association was not working quite to the point in directing its energies to securing white labor altogether. He stated that in his district he was replacing them with Japs, finding the latter more reliable and more efficient. Mr. Shaw stated that in his experience the Japanese were not reliable, and were quite ready to leave him when occasion arose. Mr. Scott and Mr. Abriel spoke emphatically in favor of white labor. They admitted that many of the white men imported were unsuitable, but pointed out that the resolution to which Mr. Ricardo spoke indicated a way to overcome this difficulty. Mr. A. Unsworth then stated most emphatically that he hated the sight of the Japs, and this matter was then dropped. The following was moved by Mr. W. C. Ricardo, and seconded by Mr. W. F. Somers, and carried:

"That in the opinion of the directors of the Association, a paid man should be appointed to gather crop reports on prospects and labor necessities in reference to the fruit industry of the province." In amendment to Mr. Ricardo's motion, the following was submitted and carried: "That we respectfully request the hon. the Minister of Agriculture to make this appointment at his earliest convenience."

Crop Reports—The secretary was directed to perfect the present system and work in conjunction with a man to be appointed as per the previous resolution.

Dominion Conference—Laid over to next meeting.

Representation of Affiliated Associations—It was suggested that the voting power at annual conventions be limited to directors and representatives of affiliated associations, so as to give the latter more power in the direction of the Association. It was deemed impracticable to have a

meeting of all the managers of these associations at the expense of the British Columbia Fruit-growers' Association, and the secretary was forbidden to arrange meetings of the directors of the great divisions of the province, to stimulate the growth of the Association, and the development of its policy as best suited to the needs of these divisions.

The Deputy Minister of Agriculture stated that Mr. Clark, an assistant inspector from Vancouver, had been detailed by the minister to visit the strawberry and raspberry districts on the United States side. The department, he stated, would send a suitable man for a sufficient period to collect information on the tender fruit, and that later a man would be sent to report on the general condition of the apple crop. The directors approved of the plans of the department in this connection, as indicated by the following resolution, which was carried unanimously:

Moved by Mr. W. C. Ricardo, and seconded by Mr. J. C. Metcalfe: "That the minister's attention be respectfully drawn to the great necessity of gathering crop reports in the Pacific States, and that this be put on a permanent footing this year so as to insure the continuity of the work for future years."

The Deputy Minister, on request, stated that Mr. J. C. Metcalfe should be sent under the Board of Horticulture as before. The Association would receive his reports and records entirely. These reports will be much more valuable than before, because the commissioner will have men at all the principal distributing points advising him on the situation at each. His important reports will be wired to Victoria direct, and handed to the Association for distribution.

The Chairman stated that this met with the approval of the directors. He stated that the work of last year had done much to draw the growers together, and that the work could be extended each year with lasting benefit to the industry. In order to outline the policy of the Association on the distribution of these reports, the following resolution was moved by Mr. A. Unsworth, and seconded by Mr. J. Johnstone, and carried: "That all information on crops and markets be distributed

only through the Fruit-growers' Association to its members."

The directors decided against the sending of wires direct from the prairies or United States side to the distributing centres of Vernon and Nelson, as well as Victoria. The Deputy Minister stated that the department would be prepared to send out wires to individual members in certain cases aside from the wires to affiliated associations sent by the Association.

Transportation—After some discussion it was moved by Mr. J. Rooke, and seconded by Mr. F. D. Nicholson, "That the executive act as transportation committee." Carried. This in the opinion of the president was now more practicable than before, because of the expressed intention of the members of the executive to hold more frequent meetings.

Re Work of the Secretary—It had been obvious to the members of the executive for some time that the secretary could do more efficient work with extra help, and the following resolution was moved by Mr. Metcalfe, and seconded by Mr. Ricardo: "Whereas the fruit industry has attained such proportions that the work of the secretary of the British Columbia Fruit-growers' Association has been very largely increased.

Be it resolved that the minister be respectfully asked to provide an assistant to Mr. Winslow, to assist in the general secretarial work of the horticultural branch of the Department of Agriculture. Carried.

After some discussion on the great need for more scientific construction of irrigation work, and more careful use of irrigation water, the following resolution, moved by Mr. R. M. Palmer, and seconded by Mr. A. Unsworth, was carried unanimously: "Whereas it would be in the interests of the fruit industry and practically a necessity that an irrigation authority of high standing be engaged:

"To advise in the proper use of water, and by so doing save large areas of orchards from over-irrigation, and thus loss.

"And also give those whose irrigation systems are installed and have to be renewed, modern up-to-date methods of installation and construction, in connection with which very large expenditures

will have to be made for the distributing of water for 1912, as well as for the laying down of new works."

Be it resolved that we, the directors of the British Columbia Fruit-growers' Association, respectfully request the hon. the Minister of Agriculture to engage the services of Prof. B. E. Etcheverry, head of the irrigation department of the University of California, to investigate and report, with recommendation, on the distribution and use of water in the irrigated districts of British Columbia."

Plant Pathologist and Entomologist—The following resolution was spoken very ably by Messrs. Abriel, Wood and the President, and was carried unanimously: "That the action of the executive at their last meeting be heartily endorsed in connection with suggesting that the Department of Agriculture appoint a plant pathologist and entomologist, and we, the directors of the British Columbia Fruit-growers' Association, now assembled, knowing the benefits accruing and following the lines of the most progressive fruit districts of other countries, respectfully urge the Minister of Agriculture to make this appointment, securing the services of the most capable man.

"And we would also suggest to the Minister the necessity of arranging for laboratory work on broad lines for the plant pathologist, so that the fullest benefit may be forthcoming."

Untried Fruit Districts—A discussion centred about the Baynes Lane, Yahk and Upper Nicola districts, in which large areas of land are being sold for fruit, despite the small certainty that fruit cannot be made a success in these districts. The directors generally recognized the serious drawback to the fruit industry if these practices were proceeded in, and after serious discussion on the attitude which the Association should take, the following resolution was passed unanimously:

"Resolved that this Association urge upon the British Columbia Government to take immediate steps to have reliable reports made on new and untried districts which are now being exploited as fruit districts, in order that new, ignorant settlers may not be let into worthless investments by ignorant or unscrupulous agents or land companies."

Strawberry Crop—The secretary read part of a letter from Mr. Fee, of the Vernon Fruit Company, Calgary, containing a suggestion that our Association send a circular to all the retailers of fruit west of Brandon, concerning the strawberry crop of British Columbia, and the methods by which they might aid in its successful marketing. After discussion, the secretary was directed to send such circular.

Re Martin Burrell—It was moved by Mr. James Johnstone, and seconded by Mr. R. M. Palmer, that we, as members of the British Columbia Fruit-growers' Association, extend to Mr. Martin Burrell our hearty vote of thanks for the efforts which he has made so far in his fight against the reciprocity agreement in the interests of our fruit industry." Carried unanimously, with applause.

It was then moved by Mr. Metcalfe, and seconded by Mr. Abriel: "That we extend our heartiest thanks to the Kamloops Board of Trade for its courtesy in the use of their hall." Carried.

The members of the executive, on the call of the president, passed the following resolution: "That we authorize the payment of travelling expenses and daily allowances to attending directors." Carried.

It was moved by Mr. Abriel, and seconded by Mr. Johnstone, "That the next meeting of the executive and the directors be held in Vernon in the latter part of August." Carried.

Exhibition of Fruit in England—The Deputy Minister gave his following reasons for the cancelling of the annual exhibits of fruit in England:

1. That there is no Royal Horticultural show in England this year.

2. That the Boards of Trade of this province, fruit-growers' unions, etc., are carrying on exhibition work to an increasing extent.

3. That our province has attained the highest pinnacle of success in these exhibitions, and can well leave the field with honor to the other colonies.

The Deputy Minister's statement was deemed highly satisfactory by the executive. On discussion, it was resolved that a meeting of the executive be held towards the end of June. It was then re-

VANCOUVER EXHIBITION

THE Vancouver Exhibition Association are this year making a specialty of the fruit exhibit, and a number of special prizes are being offered for the best exhibits of early fruit, particularly peaches, prunes, plums and the early varieties of apples.

These fruits have not been catered for to any extent by any of the exhibitions on the coast, and the management has this year taken up the matter very fully, thus giving the growers of British Columbia an opportunity of exhibiting their early fruit, not only to their own material advantage, but to the advantage of the province at large. As the exhibition is held at the height of the tourist travel, there will be large numbers of people visiting the coast, not only from Canada, but many parts of the United States, and the fact that the Vancouver Exhibition Association is offering \$50,000 in prizes this year speaks for itself.

The Association are building a new stock judging pavilion that will seat 5,000 people, and is the largest building of its kind west of Chicago to be used exclusively for this purpose.

Ample accommodation is being provided for the fruit exhibit in a building admirably suited for this purpose, being cool and having every facility for making this feature a success.

The new horticultural building offers excellent opportunities for the exhibiting of the entries of this class.

The dates are August 28 to September 4 inclusive. The Vancouver Exhibition is rapidly developing a splendid summer fair, and should not in the least minimize the importance of the late fall fairs at New Westminster and elsewhere in British Columbia.

FATHER KNEW

Curious Charley: "Do nuts grow on trees, father?"

Father: "They do, my son."

Curious Charley: "Then what tree does the doughnut grow on?"

Father: "The pan-try, my son."

solved "that we adjourn on the call of the chair."

An Echo from the Land of the Maori

A SPECIAL travelling correspondent from Christchurch, New Zealand, writing to "The Press" of that city from Vancouver, B. C., during the progress of the First Canadian National Apple Show, the first week of last November, gives some idea of the splendid publicity value of that enterprise from a civic, provincial and national standpoint. He said in part:

On arrival at Vancouver, after a most enjoyable trip through the Rockies, we found a most remarkable festival in progress. The whole city was given up to apples. Never in the history of the world, since the days

Of man's first disobedience, and the
fruit of that forbidden tree
Whose mortal taste brought death into
the world and all our woe—

has the apple caused so much commotion as it produced in the commercial capital of British Columbia in the first week of November in this year of grace. Every shop window was given up to apples. The grocers, the tailors, the druggists, the drapers, vied with each other as to who could display the most brightly-colored and attractive-looking trophy of apples in their shop windows. The whole front of the leading "department store" was given up to apples, and not only real estate agents, but even hotelkeepers appeared to have forsaken all to go into the apple business. The whole city was apple mad. An old lady stopped the tram we were on. "Is this right for—?" she asked breathlessly. "Yes, jump in!" replied the conductor, without allowing her to finish the sentence. When we found out afterwards that she wanted to go to the C. P. R. station, he apologized profusely, explaining that he thought that, like everybody else, she wanted to go to the Apple Show, and he grieved to say

he had brought her nearly a couple of miles out of her way.

Of course we had to go to the Apple Show, too. If we hadn't gone willingly we should have been taken there *volens*, sooner or later, by a cabman or a tram conductor, obsessed with the prevailing mania. And it was certainly a sight worth seeing. It was held in the Vancouver Horse Show building, and a large temporary structure of timber, which, as a placard over the entrance proudly informed us, was "erected in nine days"—an example of Canadian "hustle." Later on we had an example of Canadian "blow," in the statement by the manager that this was "the greatest apple show in the greatest city in the greatest province in the greatest Dominion in the greatest Empire the world has ever known." We may concede the greatest Empire and the greatest Dominion, and, I think, without doubt, the greatest apple show. It was not an exhibition of specimen apples, or even of specimen dozens or baskets of apples. The great feature of the show was the car-lot class. An entry in this class comprised a carload, that is to say 600 boxes, each containing on an average 120 apples, or 72,000 in one exhibit. There were twelve such entries. Then there were 79 entries in the ten-box class, 75 entries in the five-box class, and so on, until we came down to the single-plate entries, of which there were no fewer than 1944. Altogether there were 3424 entries, comprising some ten thousand boxes, or about one and a quarter million apples. As far as one could see, these were perfectly shaped, polished like wax, with not a speck of blight, or anything approaching a blemish upon them. There was one carload of apples all of a pale yellow, almost a primrose—Grimes Golden, I think the variety was called—which seemed to throw a mild effulgence, as of

moonlight, across the building. There were apples blushing rosy red, and apples of translucent green. The strong point of Canadian apples, as of Canadian autumn foliage, appears to be their brilliant coloring. There was a small "Australian exhibit"—chiefly of Sturmers and other good-keeping kinds, which looked painfully homely beside their gaudy Canadian rivals. Of course it has to be remembered that those were out of season, and, indeed, it is obvious there never can be any fair competition at any one show of apples ripening in April on one side of the world, and apples ripening in October in the other hemisphere. The Antipodean visitors were unanimous, however, in declaring that in the matter of flavor, Canadian apples do not come up to English or New Zealand or Tasmanian fruit. They are for the most part woolly in texture, deficient in aroma and the subtler essences which go to make an English Ribston or Cox's Orange Pippin one of heaven's best gifts to man.

Nevertheless, as an apple spectacle, a veritable Feast of Pomona, this apple show has never been surpassed. Certain confident Americans who had been talking in "Ercles" vein the night before, of the glories of the Spokane show over the border, were observed wandering about "the greatest apple show of the greatest city," etc., with quite a subdued, not to say crestfallen, expression of face. A London expert, who told me he had come 6000 miles to see this exhibition, said it was "simply staggering." And so in truth it was. The 10,000 boxes of apples were arranged tier upon tier, in a kind of sloping bank, around the sides of the huge building, so that if you went on to the band platform in the centre you could gaze on a huge cascade of apples about 450 feet in length, and 12 feet or 14 feet in height. The smaller exhibits were arranged on tables in the middle of the building. Space fails to speak of the ingenious devices by which some of the exhibits were displayed to the best advantage. The carload entry from Grand Forks, for example, bore the name "British Columbia," worked out in boxes of yellow and green apples, boxes of bright crimson apples being used as the background. In an annex to the main build-

ing were shown cultivators, manures, apple-parers, evaporators and the most attractive photographs and placards regarding the wonderful lands on which the apples were grown, and the real estate agent was to be seen and heard everywhere telling in seductive tones of the fortunes to be made, and the idyllic life to be led by those who embraced the opportunity of taking up orchard land on the terms offered. You needn't go near the land, at any rate for five years, unless you wanted to do so. There are companies who will sell you the land, plant it for you with the most suitable trees, and cultivate it for you until the trees come into profitable bearing, when you may leave the office or the shop and henceforth lead the simple life under the shade of your own apple tree, and if one may believe the glowing representations put forth, continue to reap a golden harvest with a minimum of exertion.

And here a word of warning seems necessary. The cool, observant, calculating stranger—a trifle cynical if you like—could not avoid the suspicion that the enterprising land speculator had a good deal to do with the promotion of the show, and hoped to reap his harvest without waiting five years for it. It is not doubted that apples can be grown in Victoria, in the Okanagan Valley and other districts lavishly boomed in connection with this show. Whether it is a paying investment, however, to give from £60 to £120 an acre for this land may be open to doubt. Personally I have no doubt at all on the subject, being convinced from the result of enquiries among disinterested authorities that the value of such land is being ridiculously over-inflated, and that many people who are being induced to buy it will meet with as cruel a disappointment as awaited the victims who were led into orange-growing in Florida some years ago by the same kind of misrepresentations. One paper estimated the value of the apples at the show at £13,000, because there were about 1,300,000 in number, were picked specimens, and if sold in the winter season would fetch "a nickel" ($2\frac{1}{2}$ d) each. I fancy a good many of the real estate agents who specialize in orchard lands frame their estimates in a similar

way. I find that tons upon tons of fruit are allowed to rot upon the ground at Vancouver Island, as well as in New Zealand, because the expenses of getting it to market are more than the fruit will fetch. A limited quantity of apples from British Columbia is already sent to Australia and New Zealand, where it hits the off-season, and is very acceptable, but that market will soon be glutted. I doubt, however, if 10 per cent. of the apples shown at the show would survive a voyage to New Zealand and arrive in good condition.

The truth is that there still remains a good deal to be done in British Columbia, as well as elsewhere, in the matter of organizing the marketing of fruit, the provision of canneries, and so forth, so as to put it on a sound commercial basis. That this will be done in time no one can doubt who has watched the business enterprise, and ability of the Canadian people. The government have taken the matter up with the energy and solicitude they show in exploiting Canada's unrivalled resources. There was a government exhibit of apples grown in every part of the Dominion on the State experimental farms. These were in charge of Mr. J. A. Ruddick, who has made his mark in the Canadian Department of Agriculture, as he did in that of New Zealand. It was announced that the Provincial Government intended to purchase two of the carload exhibits to show in Great Britain in connection with their great advertising campaign. That there is a future before fruit-growing in British Columbia—and doubtless a prosperous future—is not denied. In the meantime, however, New Zealanders at any rate would do well to accept with a good deal of reserve the statement made in the highly poetical literature issued by those who have orchard lands to sell in British Columbia. If they want to try fruit-growing they can make the experiment in their own country with just as much prospects of success. Any practical man will tell them, however, that in no part of the world is fruit-growing a rapid road to wealth without the necessity of doing any hard work. For a get-rich-quick method, the artistic selling of orchard lands offers much better pros-

pects of success. Whether it is an equally honorable pursuit depends on the point of view.

Altogether there were 234 varieties of apples shown at the great show. The first prize of £200 for the best carload exhibited was won by the Kelowna Board of Trade, with a carload of Jonathans, said by the judges to be the most magnificent carload ever seen at any exposition. The same carload gained the first prize for Jonathan apples only. The Grand Forks exhibit, already referred to, lost the first prize from the fact that there was discovered in one of the boxes a single Greening among the Jonathans. One exhibit of 45 apples weighed 57 lbs., and it was topped by a diminutive specimen, "the little Wagener," which was not more than half an inch in diameter, and weighed less than an ounce. A display of Yellow Newtowns, which won a second prize in the carload lots, was stated to have been grown entirely on 120 trees, which were planted on 1½ acres of land. The exhibit filled 600 boxes, and was certainly a wonderful display of fruit. The pleasure of those attending the show was materially aided by the performance of the fine band of the 48th (Canadian) Highlanders.

We rather like the interesting way in which this correspondent writes of our Canadian enterprise and achievements, and also the way he gets in a boost for New Zealand.

But we wish to assure him that we produce as fine Cox's Orange Pippins in parts of Canada as ever grew in England or elsewhere, and that "the enterprising land speculator" had absolutely nothing to do with the "promotion" of the First Canadian National Apple Show.

A HOT SUBJECT

Judge Sharp Williams tells the following:

"One of the negroes on my place did me quite a valuable service once and I wished to show my appreciation. After paying him I asked.

"Now, uncle, which shall I give you, a ton of coal or a bottle of whiskey?"

"Fo' de Lawd Massa John," he replied, 'yo shorely knows Ah only buhns wood.'"

Tree-Fruit Thinning

Instructions Issued by the Department of Agriculture of British Columbia

THE removal of surplus fruits from fruit trees is a matter of great importance, and is receiving more attention each year from the growers in British Columbia. On this account some general arguments in favor of the practice and some hints on methods may prove of value, more especially to beginners.

While the crop of tree-fruits, as a whole, is not heavy this year, some trees are overladen, and there are very few on which the fruit could not be improved by judicious thinning. The members of the British Columbia Fruit-growers' Association know that the crops of Ontario, Nova Scotia and all the Eastern and Central States promise to be the largest in years, which means a great bulk of No. 2 fruit on our markets this season. In the season of 1910 the difference between the prices of No. 1 and No. 2 fruit was not great. This season, on the contrary, the higher grade fruit will probably bring a much better price and, in addition, will have a much wider market and a keener demand.

On a medium or short crop, the grower naturally wants all the possible returns for his fruit. When he considers that the surplus, mis-shapen and diseased fruit on a tree decrease the quality of the balance, he will see the urgent necessity for the proper amount of thinning. Winter pruning is in essence a method of thinning. It can, however, never take the place of the latter practice, and no grower has a right to say that because of judicious winter pruning, thinning is unnecessary. Every tree should be inspected and, if necessary, the fruit thinned.

THE REASONS FOR THINNING FRUITS

1. From the standpoint of the tree and the soil the great argument is that a crop of numerous small apples has many more seeds in it than the same weight of larger fruit. It is the seed, and not the

flesh of the fruit, which requires the concentrated plant food. A thousand small apples make about double the drain on plant food that 500 large ones do.

2. Trees judiciously thinned tend to bear moderate crops each year. They do not degenerate into bearing in alternate years, and trees which have acquired this bad habit may be trained into more regular annual bearing by proper thinning.

3. The weight of fruit can be distributed more evenly and more towards the centre of the tree, enabling the tree to carry the fruit more easily with less breakage of branches from wind or from the heavy load. It helps to make props unnecessary.

4. The fruit is of higher quality in the years of heavy crop, and in years of a general light crop there is a larger quantity with quality, so that on the average the growers receive a much higher net return from the tree.

5. Thinning does not necessarily decrease the weight of fruit harvested. Usually the weight in any one year is just as great as though no thinning had been practised. Sometimes it is greater.

6. The removal of mis-shapen apples and of all but one apple from each cluster diminishes the percentage of culls.

7. The percentage of perfect apples may be increased up to as high as 99 per cent., and still a tree may carry a full crop of them.

8. The fruit usually averages higher in color, of a larger size, more uniform, and better in flavor and keeping quality.

9. The cost of harvesting, handling, wrapping and packing a box of 96's is much less than that of 188's.

10. The grower reaps the greater prices and the greater profit from selling the larger and better grades of fruit. This will be especially marked in 1911, and as competition for markets increases, this benefit will become greater year by year.

11. Both the individual grower and the district gain in reputation by the higher quality of the output. This reacts in future seasons in a wider market and still higher prices.

In British Columbia there is probably no question but that in every district thinned fruit will give a better profit to the owner. The objection that the labor for the purpose is expensive is obviously a fallacy, as it cannot cost any more to pick an apple in June than it does in October.

WHEN TO THIN

The proper time to thin large fruits is in the month of June and early in July. The thinning of pears on Vancouver Island is done in May and early June. If the thinning of fruit is left later than early July, the fruit is much harder to remove, progress is much slower, and much valuable energy wasted by the tree.

HOW MUCH THINNING SHOULD BE DONE

The above question is one depending upon many factors, and one to which no definite answer can be given, but generally speaking, if the following principle is kept in mind, the grower is not likely to go far wrong: *Leave just as much fruit as the tree can safely carry to perfection, and at the same time retain vitality enough to develop a sufficient number of strong fruit spurs for the following season's crop, and make sufficient wood-growth for its age and variety.*

While experience is evidently the chief factor in so deciding, there are, however, a number of practical hints which will help to secure good results:

1. Apples should generally be thinned to about 6 inches apart on the limb. Varieties which grow to a large size should be left farther apart, while early varieties and small growing kinds may be left somewhat closer. This rule is not altogether a safe one, as the opener the tree is the closer the fruit may be left, and the denser the tree the farther apart fruits should remain.

2. The more rational method is for the grower to decide for himself just what yield of fancy fruit the tree can carry in accordance with the above rule. On the average, a well-grown ten-year-old tree should average eight boxes of No. 1 and fancy fruit. This equals about

1,000 apples, and in thinning, this estimate should be kept in mind and can be followed, as has been found in practice, with astonishingly good results.

3. The first move in thinning is to take off the deformed, diseased and insect-infested fruit. Remove, in fact, anything which, from its present appearance, cannot become a high-class apple.

4. Only one apple or pear should be left on a fruit spur, and it is generally better to remove all the fruit from each alternate spur. Fruits hanging on the ends of slender branches rarely grow to a full size, and so should be removed. In thinning summer and early fall apples, including Duchess, one custom is to leave about two to a spur at the time of thinning, and then remove one of these in harvesting a crop of green cooking apples in early August—the other being removed with the full crop a couple of weeks later.

5. Apple blossoms are born in clusters, of which the central blossom opens first and produces the largest apple. This central apple is always more typical of the variety than are the outside ones. It is usually superior in color, size and keeping quality as well, so that as far as possible the centre apple should always be left.

6. Plums are usually thinned to about 2 inches apart, though the actual distance, as with apples, depends very much on the variety and district and must be decided by the experience of the grower. It is unnecessary to thin the Italian prune, the Englebert and some others.

7. Cherries, apricots and crab apples are seldom or never thinned.

The only apparatus required for thinning is the customary fruit-picking ladder, a bag if there are any infested or diseased fruits to be gathered and destroyed, and a pair of thinning scissors. Growers differ as to whether the scissors are a time-saver, but a good pair is excellent, especially with hard-pulling varieties.

Further information on this subject can be obtained through the Department of Agriculture at Victoria, B. C., or any of the assistant horticulturists, addressed at Vernon, Nelson and Kamloops.

June Fruit Crop Prospects

RASPBERRIES—The Lower Mainland is the principal shipping district. The full crop will be about the 15th to 20th of July. The acreage about the same as last year, with a yield of 200 crates per acre predicted at Hammond and Haney, and excellent prospects reported at Mission for over 300 crates. A few raspberries are grown all over the fruit districts, but mostly for local supply and jam factories. Raspberries will be on the whole an average crop, and prices should be good. Canneries and jam factories are creating a good demand at fair prices. Shipments will be later than usual by several days.

Cherries—Olivets are reported a good crop round Victoria, some 1500 crates in total. Sour cherries are not heavy owing to spring frosts. Sweet cherries are dropping heavily after a heavy bloom.

Early Plums—Reported fair to good crop; not at all heavy.

Italian Prunes—Lower Mainland, fair crop, and fair in Vancouver Island, but good in Grand Forks, Vernon and Kelowna, the principal interior shipping points.

Peaches—Perhaps one carload will be shipped from Summerland, and several cars from Penticton. In our last report we omitted to except Penticton from the general off-crop in this line. Latest reports indicate several carloads of the earliest varieties there.

Pears—Most varieties bloomed heavily, and very few fruits have set as a rule. Salmon Arm, Kelowna and Grand Forks report good crops.

Early Apples—On Vancouver Island the early apples will be from one-half to two-thirds of last year's crop. The late apples are reported from poor to excellent, probably 50 per cent. of 1910. In the Lower Mainland early apples will be a fair crop, but late apples will be very light indeed. Salmon Arm and Armstrong district reports early apples a good to heavy crop; late apples also ex-

cellent. Thompson River orchards and the Okanagan generally report that early apples are a good crop, from 90 to 100 per cent. of last year, and late apples will run perhaps 75 per cent. of last year's shipments. In the Kootenay early apples are reported from fair to good. Grand Forks expects a crop many times that of last year. In winter apples the Kootenay generally expects 60 to 70 per cent. of last year's crop. Generally speaking, Grand Forks will have a uniformly large crop of all varieties of fruit produced there, but all other districts will average up below last year.

On the whole, the Pacific coast crops will run 60 to 75 per cent. of last year. Colorado will be nearly double last year. Ontario and Nova Scotia report excellent prospects in all lines except strawberries and raspberries, and the great apple districts of the East and Middle West report full crops. All European apple sections are reported good to very good crops.

It will be remembered that last year the Pacific coast compared very favorably with all other American districts in an average yield. This year the Pacific coast on the whole will run much lighter, and the East and Middle West generally much heavier. This means that the general market situation this year will be very different from last year, and will have to be watched closely by our shippers, and must be met by a strong and complete organization if the best results are to be obtained against the competition of heavy Eastern shipments. It must be remembered that it is at present still too early to predict the crops with any degree of accuracy. This is particularly so with late crops, which are always difficult to forecast.

On the whole the shipments from British Columbia will not equal those of last year, though with proper organization to market it aggressively, good prices should rule. R. H. AGUR, *President*
R. M. WINSLOW, *Secretary*



HEADQUARTERS OF "THE FRUIT MAGAZINE" AT THE MADE-IN-CANADA FAIR, HELD IN VANCOUVER, B. C., JUNE 14 to 22 INCLUSIVE, IN AID OF A CONVALESCENT HOME. THROUGH THE SPLENDID WORK OF "THE KING'S DAUGHTERS" AND THE MANAGER, MR. F. M. LOGAN, THIS FAIR WAS A COMMERCIAL, CHARITABLE AND FINANCIAL SUCCESS.

Editorial

THE B. C. F. G. A. FIAT

ON Page 133 of this issue will be found a full report of the proceedings at a recent meeting of the British Columbia Fruit-growers' Association's board of directors.

As the writer counts most of these gentlemen amongst his personal friends (having been closely associated with a number of them for many years in an endeavor to promote the best interests of those engaged in the fruit industry), we feel at liberty to comment upon their official actions with the same degree of frankness that has characterized their reference to *The Fruit Magazine*, without overtaxing the principle of the ancient proverb that "a soft answer turneth away wrath."

In a series of resolutions these directors place themselves "on record as condemning the proposed reciprocity agreement between Canada and the United States"; express their thanks to Mr. Martin Burrell, M.P., for "his fight against the reciprocity agreement," and suggesting that "Whereas *The Fruit Magazine* has expressed *strong views* in favor of the proposed reciprocity agreement, in opposition to the expressed views of the great majority of fruit-growers of British Columbia, *The Fruit Magazine* should cease to be the official organ of the association."

All this sounds very terrible indeed, and at first thought one would think that we had lost our head like Moses and smashed the whole ten Commandments at once. But let us analyze the situation for a moment, and then see what it looks like.

First, since the proposed reciprocity agreement was announced, the fruit-growers of British Columbia have had no opportunity of recording their alleged "views" on the subject, and the directors of the British Columbia Fruit-growers' Association have no authority to arrogate to themselves the right to speak for

"a majority," until the members have given expression to their views on the subject by resolution, in convention duly called and regularly assembled.

Second, being the "official organ" of the B. C. F. G. A. is an empty honor, having no monetary value or moral significance, which was not asked for and which we cheerfully relinquish. At the last general convention of the B. C. F. G. A. held in Victoria, January 6 and 7, 1911, the following resolution was passed to checkmate what appeared to be a movement to place the B. C. fruit-grower at a disadvantage, without any compensating returns:

"Whereas the farmers of the northwest are asking that the duty on American fruit be reduced, and whereas the fruit industry of British Columbia is attaining very large proportions and would suffer severely in such case, be it therefore resolved that this representative meeting of British Columbia fruit-growers wish it placed on record that they are absolutely against any reduction of duty, and that the duties on fruit into Canada be raised to equal the duty imposed by the United States on fruit going from Canada into the United States."

But the reciprocity agreement proposes to wipe out the duty on both sides, which is equivalent to the last clause of the above resolution. There has been no convention of fruit-growers in British Columbia since the new situation arose.

Third, *The Fruit Magazine* is not published in the interests of the *fruit-grower* alone, but of the *fruit-dealer* and the *fruit-consumer*.

Fourth, only about 25 per cent. of the readers of *The Fruit Magazine* are fruit-growers, less than 10 per cent. are members of the B. C. F. G. A., and 75 per cent. are the great consuming public.

Fifth, the editorial articles on reciprocity in our February, March and April numbers are fair, non-partisan and



SPEAKERS AT THE CORONATION CEREMONIES IN VANCOUVER, B. C., JUNE 22, 1911

Reading from left to right, they are: Rev. John Mackay, D.D., Principal of Westminster Hall; Rev. James Carruthers; Rev. C. C. Owen; Mayor McNeish, of North Vancouver; Mr. L. D. Taylor, Mayor of Vancouver; and Mr. Geo. H. Cowan, M.P.

soundly Canadian from a national standpoint. If we are able to express "*strong views* in favor of the proposed reciprocity agreement," that is more than can be said of the arguments thus far advanced against it, and we shall revise our views only on submission of logical reasons.

Sixth, the columns of *The Fruit Magazine* are, and have been, open to all who wished to present arguments either for or against the proposed reciprocity agreement. What we want is the fullest and freest discussion in order to throw all the light possible on the subject, not bald assertions without reason or argument.

Seventh, the editorial columns of *The Fruit Magazine* are not for sale, are not controlled by any faction, and, so long as the present incumbent occupies the editorial chair, no individual, class, association or political party need attempt to dictate what our policy toward broad public questions shall be. But we welcome the opinions of our readers, and shall always accord them the same respect as we demand.

In order to expand the usefulness of the B. C. F. G. A. every precaution should be taken to guard against any justification of the charge that the association is a semi-political organization.

It might be well for the members to consider carefully the suggestion made at the meeting above referred to, that "the voting power at annual conventions be limited to *directors* and representatives of affiliated associations."

While we rejoice in the fact that *The Fruit Magazine* is published in the great commercial and picturesquely beautiful city of Vancouver, in the splendid Pacific Province of the Dominion of Canada, it is not a British Columbia publication alone, but "national in scope and world-wide in its sympathy and influence." We do not propose to deal with important public questions, like the proposed reciprocity agreement, from a purely local standpoint, but with a view to presenting the broad national aspects of such subjects. In order to build up the industry upon a sound commercial basis the fruit-growers must look beyond their narrow

circumscribed immediate surroundings, and, with a comprehensive vision, view intelligently great national and world movements that naturally develop with the onward march of civilization.

JULY 1, 1911

THIS number of *The Fruit Magazine* will be dispatched to the thousands of our readers in all parts of the Dominion and elsewhere throughout the world on Canada's national birthday, and we certainly have reason to be proud of the fact that, as the years go by, this country bulks larger and larger as she takes her place amongst the important commercial nations of the world.

It is interesting to note that the freer, stronger and more independent Canada becomes the stronger and more electrified becomes the invisible bond of fraternal unity which binds together the various nations which make up the family who are proud to call Great Britain mother.

Since the day that Britain entrusted Canada with responsible government she has never had reason to regret the confidence reposed in her offspring; and should occasion arise the whole family of nations would be found standing like a wall of fire around the much-loved isles.

Let us continue to promote the highest national development of Canada on the basis of freedom, justice and truth; trust

common history and traditions to inspire the other English-speaking nations with the same noble ambition, be true to ourselves and have no fear for the future peace and welfare of what is now called an Empire, but which is something more.

CULTURE OF THE YOUNG TREE

THE first year is probably the most trying time for the young tree. It is at this period that it requires plenty of moisture and good vigorous growth. Any shock or check to growth invites disease and innumerable troubles. All cultivation in the young orchard must be directed toward the production of a healthy, vigorous and well-grown tree. Neglect and sod will not keep the young tree at its best. The grower should use judgment in handling his young orchard, for it is very easy under our western conditions to grow a tree too rapidly.

This is especially true in the irrigated sections. The evil effect of forcing the growth is noticed in large brittle limbs, which readily break under weight of fruit, in the absence of fruit spurs, and in the inability of the tree to produce fruit in proportion to its age. Only a study of the individual tree can determine the methods to use in handling a young orchard. Some growers make the mistake of allowing their trees to bear fruit while too young. If trees have a tendency to do this when they are two to five years old, judicious thinning must be practised.

THE PRODUCER



MIRANDA: LAW SILAS, MY BACKS NEAR BROKE AND MY HEAD'S JUST SPLITTIN'!
SILAS: CHEER UP MIRANDA, THESE BERRIES IS WORTH TEN CENTS A BOX— AINT THAT GREAT?

THE CONSUMER



HONEY: TEN STRAWBERRIES FOR TEN CENTS AND CREAM AND A WAFER THROWN IN FOR A NICKEL!
BUNCH: WELL I CALL THAT GENEROUS!

A BIG SHRINKAGE SOMEWHERE

A two-year-old apple or pear tree should not be allowed to bear fruit, while an occasional specimen may be allowed to remain on the three, or four-year-old tree. An abnormal growth is sometimes directly due to heavy pruning while the tree is dormant, but in some cases it may be a combination of conditions such as excessive watering, cultivating and fertilization.—*W. H. Wicks, Horticulturist, Idaho University Experimental Station.*

FUNDAMENTAL CONDITIONS GOVERNING THE VALUE OF FRUIT LANDS

THE value of fruit lands varies according to conditions; some are dear at \$10 per acre, others are cheap at \$2000 per acre. Four fundamental conditions govern the value of fruit lands—land, labor, transportation and market.

The most productive fruit land in the world would have positively no value as fruit land if there was not a demand for the particular kind of fruit which that land could produce.

Even if there was an enormous demand for fruit and the particular fruit lands in question were immensely productive, they would have only *speculative* value if transportation facilities were inadequate.

Granting that the land was very productive, transportation facilities adequate and markets favorable, the other condition, labor, must be taken into consideration.

The land itself is, of course, the vital factor in the production of fruit, but the *net profit* one can realize depends upon the balance of the conditions.

Following is an analysis embracing the twenty-three conditions governing the value of fruit lands:

Soil—Nature; water supply (precipitation), (irrigation); water drainage (surface), (sub); air drainage; state of cultivation; development; altitude.

Climate—Sun, temperature, winds (velocity).

Labor—Quality, supply, wages, transportation.

Transportation—Rivers and lakes, railroads, wagon roads.

Markets—Local, provincial, national, foreign.

—Sherman H. Curtin



THE ROYAL SALUTE—TROOPS AND CITIZENS AT THE CORONATION SERVICES, VAN COUVER, B. C., JUNE 22, 1911
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The Rational Use of Lime

By WM. P. BROOKS, Massachusetts Agricultural Experiment Station

NO subject connected with the various steps which may be taken to increase the productive capacity of soils interests our farmers at the present time more than the use of lime. The practice of applying lime, while it has always been somewhat in vogue, has become much more general during the past few years than formerly. This change must on the whole be regarded with favor; but there is a possible danger that the pendulum may swing too far in the other direction. It is well to remember that in most parts of the State there is sufficient lime in the soil to meet the direct requirements of our growing crops. This does not mean that lime is not often highly useful; but it is mentioned simply to emphasize the fact that if useful it is usually because of indirect or secondary effects and not because more lime as a source of food for the growing crop is required. The facts being as stated, it is highly important to know what these indirect or secondary effects may be.

POSSIBLE EFFECTS OF LIMING

The secondary or indirect results which will follow an application of lime must of course vary with soil conditions, but the principal possible effects which are of importance are as follows:

1. Free acid if present is neutralized. A sour soil is sweetened.
2. Some of the less soluble potash compounds of the soil are rendered available and the need of potash manures will be lessened, at least for a time. Liming will not permanently take the place of potash manuring, for it will be understood that it adds no potash to the soil. It simply makes it possible to draw upon the stock found in the soil more rapidly, and this, if persisted in without application of potash, will ultimately result in the exhaustion of this element.
3. Phosphatic fertilizers are often rendered more effective. This seems to be especially true of the less soluble ma-

terials, such as fine ground rock phosphates. An application of lime appears also to increase the availability of the comparatively inert phosphates of the soil itself.

4. Organic matter decomposes more rapidly and the plant food it contains becomes more promptly available. This action is most important in its relation to nitrogen, and it is especially valuable in heavy soils, in which organic matter naturally decays slowly. Its effect is also often important after turning under a green crop. On the other hand rapid decomposition of the organic matter, naturally present in such soils in only small amount, may prove harmful to the lighter soils.

5. Ammonia and its compounds change into nitric acid more quickly. In other words, ammonia nitrogen becomes more promptly available, as nitric acid when combined with bases which form nitrates is the most promptly available nitrogen compound for most crops. Sulphate of ammonia, when used as a fertilizer, gives poor results in many of our soils unless these are first heavily limed.

6. Lime mellows heavy and clayey soils. It does this because it flocculates the clay particles, thus making the soil more friable and permeable. Both drainage and capillary action are therefore improved and the soil is less likely to become over-compact and to form crusts and to crack. The maintenance of good tilth is therefore more easy.

7. A moderate application of lime, especially if used in connection with green manuring or an application of any organic manure, will increase the capacity of the lighter soils to retain moisture.

8. Heavy applications of lime in practically all locations in the State as far as tested, appear to be absolutely necessary for success with alfalfa.

9. The presence of lime in the soil is highly unfavorable to the parasitic organisms which are the cause of certain



FRUITLANDS, ON THE THOMPSON RIVER, NEAR KAMLOOPS, B. C.

diseases. Most important among such diseases are club-foot of cabbages and cauliflowers and finger-and-toe of turnips and beets. If the soil is badly infested, lime may not prove a complete prevention, but the free use of lime without doubt decreases the tendency to these diseases.

HOW TO DETERMINE WHAT SOILS NEED LIMING

1. Those soils on which, when seeded, timothy and clovers fail, and where sorrel comes in largely together with red top, usually need liming. It should be pointed out, however, that the presence of sorrel is not a proof that lime is needed. This weed will flourish even in soils which have been heavily limed; but on such soils the grasses and clovers are likely to crowd it out, while on soils which are in need of lime they are unable to do so. The presence of much moss or an abundant growth of bluets (*Houstonia cærulea*), horse tails (*Equisetum*), or polypods (*Polypodium*) is an indication that lime will probably be beneficial.

2. When soil is sour it will turn blue litmus paper placed in contact with it red. To carry out the test, make about a tablespoonful of the soil into a thin mud with pure water and after it has stood for a short time lay a piece of blue litmus paper on it and cover with the mud. Be careful not to handle the paper with the fingers. After about ten minutes remove the paper, washing it if necessary to show the color. If it has turned red, the soil is sour and needs an application of lime. Practically all druggists keep litmus paper.

3. The most certain evidence of all as to whether lime will prove beneficial is afforded by a simple experiment which may be carried out as follows: Lay off two square rods in a part of the field to be tested which seems to be fairly representative and even in quality. To one of these apply 20 pounds of freshly slacked lime. After applying at once work it in deeply and thoroughly. A few days later apply to each plot a liberal quantity of either manure or fertilizer, precisely the same amount to each. Plant table beets. If the soil is much in need of lime, these will make a better growth upon the limed plot.

THE RELATION OF LIME TO CROPS

Different plants require varying amounts of lime. Some are extremely sensitive to and much injured by the presence of free acid. Others are comparatively indifferent to the presence of such acids, while still others appear to do better in soils containing them. Among plants requiring large amounts of lime in the soil are alfalfa, clover, peas, beans and vetches. Grasses, as a rule, require less lime than clovers, but timothy will not do well in soils markedly deficient in lime. On the other hand, red top thrives in sour soils. Neither corn nor millets are especially sensitive to acid. They will often do well on soils which are sour. The same is true of potatoes, although excessive acidity is undesirable for even these crops. Cabbages and turnips and all the cultivated members of the same family require large amounts of lime. Mangel wurzels, sugar beets and table beets are usually benefited by lime, as are also onions, spinach and lettuce; celery also is much benefited by liming. Among fruits the apple, pear, peach, plum and cherry usually do best where lime is abundant. The blackberry, on the other hand, does well in soils containing free acid, and some experiments indicate that the strawberry does not particularly require lime.

Lime should not be applied immediately preceding a crop of potatoes. They are more likely to be affected with scab should such an application be made.

METHODS OF APPLYING LIME

Although lime applied as a top dressing on grass land is often beneficial, it proves most effective in correcting most of the faults of soils needing liming if it can be applied to the ploughed surface and thoroughly mixed with the soil. The autumn or early spring is usually best, but lime may be applied without hesitation at any season of the year when the land is not occupied by crops and when it can be ploughed. If manures or fertilizers containing ammonia or organic nitrogen are to be used in connection with lime, the latter should be put on and incorporated with the soil before the manure or fertilizers are applied. Lime should always be applied broadcast, and as soon as possible after it is spread upon



PART OF THE FLORAL PROCESSION TO THE MADE-IN-CANADA FAIR, VANCOUVER, B. C.

the rough furrow it should be deeply worked into the soil. For this purpose either the disk, cutaway or spring-toothed harrow will be most effective. To apply by hand is disagreeable, especially in the case of the finest and driest forms of lime. A machine distributor or a manure spreader should be used if possible, and the extent to which the lime will fly into the air when a distributor is used will be much reduced by an apron of heavy burlap attached to the bottom of the hopper and extending to the ground.

QUANTITY OF LIME NEEDED

The amount of lime needed under different conditions varies from a few hun-

dred pounds to several tons; but an average of about one ton of good lime to the acre will usually be sufficient. If grades of lime are used which contain 50 per cent. or less of calcium oxide larger quantities will be required. Such applications as have been suggested will not unusually be called for a second time. Smaller applications—perhaps three to six hundred pounds—once in two to four years, will be preferable to very heavy applications at longer intervals; and if basic slag be freely used as a source of phosphoric acid, it is probable that a second application of lime will in most cases be unnecessary.

How Much Mulch

Comments by Mr. R. L. ADAMS

THE amount of mulch which shall be maintained in any orchard must be regulated by the character of the soil. The question of what constitutes a correct mulch cannot be stated in a definite rule applicable to all cases. The variations of soils are infinite in number and a depth of mulch suitable and proper for one class of soil will often prove too deep or too shallow for another.

Opinions are varied regarding what constitutes a proper degree of cultivation. Prof. King says:

"Soils which maintain a strong capillary rise of water through them will, when converted into mulches, still permit the water to waste through their mulches faster than it will be lost through the mulches of soils which permit only slow capillary movement." That is, clay soils require deeper mulches.

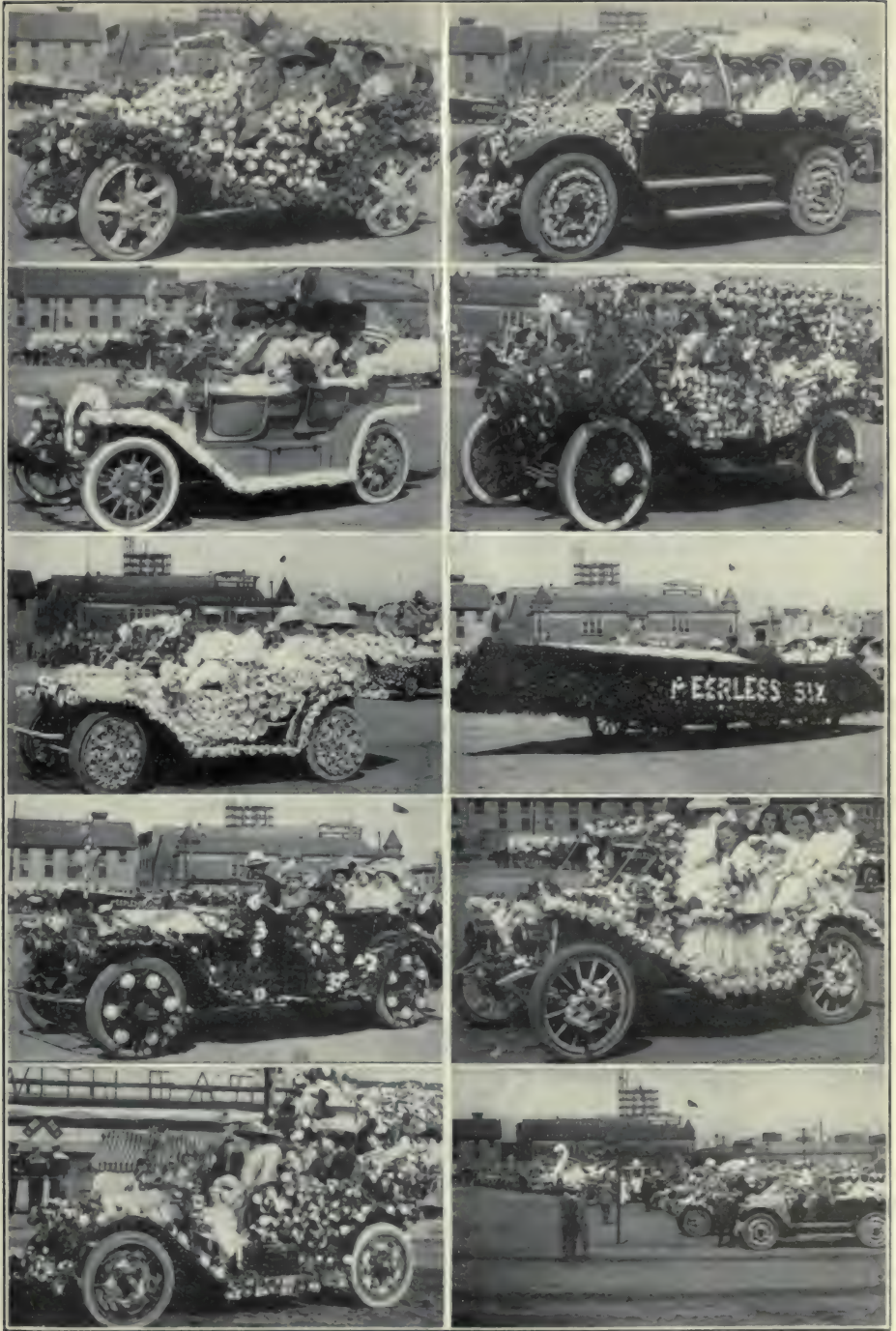
Laboratory experiments with two-inch and four-inch mulches have shown the amount of moisture saved by mulches to be: On sandy loam, 54 per cent. for a two-inch mulch and 57 per cent. for a four-inch mulch during 100 days' time; on clay loam the saving was 59 per cent. for the two-inch mulch and 63 per cent. for the four-inch layer during the same

length of time. To my notion, the saving of moisture between the two-inch and four-inch mulch is not sufficient, in such cases, to pay for the extra work.

When a soil mulch is well loosened and thoroughly separated from the firm ground beneath, and especially after the mulch has become quite dry, little can be gained by stirring the soil.

Dr. Hilgard states, in his book on "Soils," "That excessive aeration results in serious losses of humus as well as of nitrogen is very obvious in the arid region, where it is the habit to maintain on the surface of orchards and vineyards during dry, hot summers, a thick mulch of well-tilled soil, thus preventing loss of water by evaporation. In the course of years this surface soil becomes so badly depleted of humus that good tilth becomes impossible, the soil becoming light-colored and compacted, while the loss of nitrogen is indicated by the small size of the orchard fruits."

Prof. Wickson, Dean of the College of Agriculture of the University of California Experiment Station, believes that getting a mulch and letting it alone to be a rather dangerous practice. In one of his books, where he takes up soil prac-



PART OF THE FLORAL PROCESSION TO THE MADE-IN-CANADA FAIR, VANCOUVER, B. C.

tices, he writes: "Summer cultivation means cultivation all summer, or at least as long as growths are progressing."

The earth mulch will have its capillarity restored by its own absorption of moisture from below or from the air, and it will lose its efficiency as a protecting cover even though no rain falls. Therefore, frequent stirring to the adequate depth, but without soil-turning, must be maintained at intervals, both to restore the mulch and to destroy weeds which start late and pump moisture away from the plants in an incredible amount."

Observation indicates that the formation of a plough-pan in many cases is the result of breaking down the compound soil-particles by working the land dry, so the fine particles work down to the depth of ploughing, to be once more brought together under the influence of water, in this case, however, in a more compact, more impenetrable layer—the so-called plough-pan. Plow deep and cultivate shallow—the depth which will constitute "shallow" depending on the character of the soil. The size of the soil grains, the frequency and amount of rainfall and irrigation, the humid conditions of the air, and the physical condition of the soil as regards humus, all have a bearing on determining the depth.

The first handling of the soil is of far more consequence than subsequent cultivation, for if the work is poorly done at

the beginning of the season, later cultivations can only modify and not entirely eliminate the results of improper preliminary preparation. Land ploughed either too wet or too dry will never attain its greatest moisture-holding power—for the current season, at least. It either packs too hard, remains cloddy, or reduces down to a dry and floury powder.

The proper depth of cultivation is reached when a sufficient depth of dry soil is produced over the body of well-moistened soil beneath, so that the two remain distinct, and the change in the lighter color of the mulch to the darker color of the moist soil is abrupt and well-defined, especially when several days have elapsed after the work is done.

The more clay in the soil, the greater is the depth of mulch required. And should the distinct difference fail to hold, a deeper cultivation must be given, or a repetition done from time to time, even if it be necessary to cultivate six, eight or more inches deep, and to repeat as often as rains, irrigations, fogs, or absorption tend to reunite the mulch and soil body. But while the union is distinct, leave the mulch alone until such time as new conditions arise necessitating a change. In other words, have a reason for cultivating, and do not work on an arbitrary rule of thumb of "once a week" or "once in ten days."

How Much Moisture Does a Fruit Tree Need?

KNOWLEDGE of the exact nature of the soil is the first requisite for the proper application of water to orchards. The gathering of data regarding the composition of the soil is as easy as it is necessary. By means of a shovel, a post-hole digger, or better still a soil auger, the exact nature of the soil can be determined. For large tracts of land the amount of fall of both

surface and subsoil is important. The former, however, will be determined when planning the irrigating system. The latter will develop from a study of the layers of soil which make up the field, as gained by borings.

In order to apply water right it is necessary to know the depth of the soil, the depth the roots go (as well as the depth they can go), and the capacity of the

soil for holding water. When the water is actually put on it is necessary to know how deep the moisture goes.

HOW TO ASCERTAIN SOIL DEPTH

In order to know the soil it is important that frequent borings be made to depths where it is possible for the roots

to go. These borings should be made at intervals of two hundred feet, and down to a depth of ten feet, if it is possible to send the roots that deep. Extended layers of sand or gravel having a tendency to dry out will stop root growth as effectually as layers of lime or cement hardpans, very stiff clays or adobes. Water in quantity is another effective barrier to root development. Therefore, in determining the nature of the soil it is important to bring up successive layers when boring and carefully examine them, keeping notes, and later laying out the field on paper according to the results obtained, for careful study and comparison.

A good tool for boring can be easily made by welding a 1½-inch or 2-inch ordinary carpenter's bit to a 10-foot round ½-inch iron rod. An adjustable handle, similar to that on a post-hole digger, is then fitted on. The rod can be made in two 5-foot pieces if desired, having a screw joint to fasten them together. A hole should go through the joint and be fitted with a removable pin to prevent the joint tightening or loosening when the soil auger is in use. For moist land this will give good results. For use in dry soil the portion of the bit above the cutting edges should be ground down and a brass collar fitted on to retain the dry soil. In dry soil by pouring a little water into the hole and letting it stand until well soaked up, boring will be greatly facilitated.

TO UNDERSTAND WHAT YOU FIND

When the character of the soil is known, then and only then can a man irrigate intelligently. If the soil is of a fairly open structure with a deep water table and no obstructing layers of soil, it can be irrigated as deep as it is desirable to send the roots, ten feet or more. In such land the only precaution which need be used is to be sure that the water reaches the required depth.

But when layers of gravel or coarse sand exist, these will effectually shut off the rise of water from below and irrigation water carried into them will be wasted.

Layers of hardpan form effective barriers. Often these break up under the action of the water, so that roots will



GLIMPSES OF THE CORONATION PROCESSION, VANCOUVER, B.C., JUNE 22, 1911. THE FIRST PUBLIC FUNCTION IN WHICH THE NEWLY-ORGANIZED 72nd HIGHLANDERS TOOK PART.

readily penetrate them. If the water has no effect, care must be exercised in using the water to guard against an oversupply with a consequent expulsion of the air, thus producing an oversaturated condition anything but favorable for plant growth.

When the water table exists at a depth of six feet or higher, irrigation need not be resorted to, provided no impervious layers exist above it. The presence of the water table will of course be determined in the preliminary survey for irrigation.

USUALLY MOISTURE IS SHY

In nearly all orchard irrigation work too little water is given. When only a small quantity is applied it keeps the roots near the surface. Much of the water is held in the mulch and is again lost when the mulch dries out. In the first foot of soil practically seven inches is open space, and into this the air and water enter. If we consider that four feet at least, in general, is required for root development, there will be twenty-three inches of space in this depth. In order to completely fill this, a corresponding amount of water is needed. This, however, would result in saturating the soil. In actual practice ten inches of water applied to sandy soils and eighteen inches to clay lands will give the best results. Not all the moisture is available for the crop's needs. Part of the moisture is held closely to the soil grains and will not be given up to the trees even under very dry conditions. This hydroscopic water amounts to an immense sheet in the aggregate. It is this water in which most of the plant foods are being dissolved. This unavailable moisture is greater in clay than in sandy soils, as the amount of surface of the smaller grains is vastly larger for small grains than for coarse ones, just as marble has a much smaller surface while whole than when broken into a thousand fragments. For this reason the percentage must be maintained at a higher point for moisture in clay soils than for that in sandy lands. On the other hand, sand soils will dry out much quicker than clays. An illustration of the clay particles withholding water can be seen by placing slips of plants in tumblers containing

clear and clay charged water. The ones in the clear water remain fresh and vigorous, while those in the clayey waters will wilt and droop.

WHY TOO MUCH IS BAD

Excessive irrigation is to be condemned, as it carries off the soluble plant foods. If these go into layers of sand or gravel, or into the water table, they will be carried off in the natural drainage of the country. If the irrigation water goes deep, although still remaining in the soil it will carry these salts below the reach of the roots and the chances of their being returned within range will depend on the character of the soil in its relation to its capillary power and the depth to which they are taken. The layers of gravel and coarse sand effectually cut off capillary power and the water carried below such layers, with its attendant supply of plant foods, is lost. Therefore, sufficient moisture to just reach the desired depth is all that need be given.

SIGNS OF THIRST

The needs of water can be determined by both the appearance of the trees and the soil. A slackening in growth and a darkening in color of the foliage are indications. But as the water should not fall below a point to create appearances in the tree a careful watch must be kept on the soil itself. When on being pressed together a handful holds its shape without coaxing it is sufficiently moist, and no water need be given. Care, however, should be exercised to see that the proper degree of moisture exists to the full depth of the soil.

TO SAVE MOISTURE

Land should always be handled at the right degree of moisture whenever possible. In handling dry land the compound granules of clay are broken down, and the finer particles work into the open space below, clogging them up, and thereby working badly as regards irrigation and aeration. This is a point which should be borne in mind when making a mulch. The efficiency of the mulch depends on the fineness of the texture and the degree of non-union with subsoil below. The soil should be worked only when it is at the right degree of moisture to secure the desired results, and when they are accomplished the land



Laying first sod at inauguration of Grouse Mountain Scenic Railway North Vancouver, B.C.
 June 1st 1911
 Gullens Job Photo

MAYOR McNEISH, OF NORTH VANCOUVER, TURNING THE FIRST SOD, JUNE 1, 1911, PRECEDING THE CONSTRUCTION OF THE
 GROUSE MOUNTAIN SCENIC INCLINE RAILWAY.

should be left alone. Further cultivation is liable to be detrimental. It will pulverize the soil into a fine dust which, in turn, will carry off the moisture. A two to four-inch mulch is the best. The aim should be to have as small a mulch as will properly conserve the moisture. A greater depth may reduce evaporation, but the greater loss of water from the larger mulch and its attendant placing out of commission of the soluble plant foods in that layer will more than offset the possible saving in moisture. Once the mulch is made it should be left alone. This is especially true in clay soils, for the particles are in danger of being broken down, as just outlined. In sandy soils this is not so important, but even here the value of the cultivation is small after the mulch is loose and open. Of course it is necessary to create a new mulch after each irrigation or rainstorm.

The proper use of water means the supplying of the optimum amount for tree development. This means the proper guarding against an oversupply as well as an undersupply. To be properly posted on what constitutes the right amount a knowledge of the soil is necessary. With a combination of a soil auger, a little careful observation and common sense, proper irrigation offers no very intricate problems. Each orchard, however, must be worked out individually, for from only a study of the soil before and after irrigating can the proper amounts and times for applying water be determined.—R. L. Adams in *"The Irrigator."*

FRUITLANDS

FRUITLANDS is an estate of six thousand acres situated on the west side of the North Thompson River and stretching from a point opposite Kamloops for about twenty-three miles up the river. The land comprised in the estate is in the main level and lies between the river and the base of the hills to the west.

The original company formed to handle this enterprise installed an irrigation system and subdivided a portion of the estate into small holdings of from seven to forty acres each, all of which found a ready sale and nearly all of which have since been planted to or-

chard. About a year ago and after a reorganization of the company, work was commenced upon a new canal which will greatly increase the water supply and enable the entire six thousand acres to be brought under cultivation. In the system now under construction, concrete is being largely used. All the earth walls and bottoms are being lined with this material, and cement piping is to take the place of wooden flumes in the distribution arrangement. This class of work will obviate any loss from seepage and a large proportion of the loss by evaporation.

The company still holds some of the very choicest land in the estate, and in the near future this will be subdivided and placed on the market in tracts suitable for orchard lands or intensive farming. The company maintains an experimental farm on the property and one of the demonstration orchards of the provincial department of agriculture has been located on Fruitlands so that purchasers from the company will receive the benefit of the expert horticulturist employed by both.

Situated as it is within easy reach of Kamloops and with a government trunk road to the town running through the entire length of the property Fruitlands offers many attractions to the intending settler which subdivisions of a similar nature in more isolated localities can not hold out.

British Columbia Fruitlands, Limited, and The Fruitlands Irrigation and Power Company, Limited, the former of which owns and controls the land, and the latter of which was formed to construct and maintain the irrigation system are both financed by English capital and have offices at Pinner's Hall, Austin Friars, London, England. The head offices in British Columbia are at Kamloops, where the managing director, Mr. R. W. Palmer, formerly Deputy Minister of Agriculture and a well-known authority on fruit culture, has his headquarters. Mr. Palmer's long experience in British Columbia eminently qualifies him for the management of a large enterprise of this nature, and purchasers of property in Fruitlands will have the benefit of his experience in cultivating, maturing, picking, packing and marketing their fruit.

Vancouver's Environs

THE NORTH ARM OF BURRARD INLET

"**F**AR fields are always green," they say, and "'Tis distance lends enchantment to the view." Again, "Objects pressing, dim the sight," and, "Familiarity breeds contempt." But hold, this last could never, never apply to the North Arm of Burrard Inlet—that wonderful panorama of beauty, which a whole lifetime could not exhaust or make common, but only enhance and endear. The gorgeous tints of the Sierras, the icy splendors of Alaska, the rugged grandeur of Norway, the varied loveliness of the Alps—none of these things surpass or even equal the beauty of the North Arm, which we of Vancouver can reach in half-an-hour.

Yet some of us appreciate our privileges, as is shown by the increasing number of summer cottages along its shores. Shacks, bungalows and villas nestle among trees or perch in apparent inaccessible places. And at every visit one sees new structures that seem to have grown like mushrooms over-night.

As soon as the winter rains are over, the first comers among the summer residents make their appearance and every week sees new arrivals, until all the way from Barnet to Indian River the summer population is scattered. At the same time, motor-boats, launches, sailing yachts, speed-boats, canoes and fishing smacks turn out in crowds on every fine day, and up and down the "chug-chug" of little engines is heard, along with the wash of the tide, the roar of waterfalls, and the reverberating blasts from the quarries. It is just as well not to rush the season, on deciding to spend your summer on the North Arm, else you are apt to arrive at your camp, as we did, in pouring rain, and to be forced to pick your way across a small mountain torrent in order to reach your front door.

Once inside you may be compelled to stay there for a week, or a fortnight, looking out of the windows and through

a misty downpour at your new surroundings. The green of wet fir, budding maple and alder stands out in vivid contrast to the soft grey of cloud and water and rain. "Every prospect pleaseth"—and only the weather is vile!

Still, things are not as bad as they might be, for you keep warm and dry by a fire of bark, of which an abundant supply lies at your back door, while you enjoy the unaccustomed luxury of being lazy with a clear conscience. Or if you are of the male sex you don slicker and sou'-wester and take a tramp through the wet bracken with a gun and find tracks of mountain goats on the rocks, or think you see a bear slouching through the underbrush.

Should the rain hold up for half-an-hour only, you rush out of doors, in cheerful confidence that the weather has taken a turn and the sun will soon be out. The air is washed to a delicious purity; the water, dark and smooth and grey, beckons you enticingly. You lose no time in launching the canoe, and you paddle away, in the perfect hope that Nature has nothing but good in store. And when you are a mile or so from shore, behold, the floods descend and the winds blow, and you make for home at top speed, to spend the rest of the day drying wet garments in the vicinity of the air-tight heater. Yet you do not learn from experience, but are ready to risk it all again if there be but a rent in the clouds.

Then at last comes a day when the sun shines out radiantly and the joys of camp life begin in earnest. You scale the rocks to look for flowers and ferns and mosses; or you try to become acquainted with the birds and beasts who live all the year round on your camping ground and regard you suspiciously as mere summer boarders. Perhaps you discover survey pegs and hunt up subdivisions; you select the lot of your future and permanent

summer residence and henceforth regard it with the peculiar pride of would-be ownership.

Or if you have the mountaineering instinct, you will want to make the ascent of one or more of the neighboring waterfalls—the shores of the North Arm abound with them. This is such a thrilling experience that it deserves a few words of description.

Your canoe lands you close to where the mountain stream pours into the Inlet, and you enter the narrow gorge that it has just left. On either side rise high, precipitous walls, between which broken timber and jagged stones are piled in mighty confusion—up, up, in a steep incline, till the great ladder ends in a wall of rock over which the snow-water rushes from above with a deafening roar.

This cascade is hidden from view when the ascent begins. At first all you see is a turbulent stream running over or dropping under the debris of former floods and you pick your way among the rocks or clamber over logs, or, if you are young and active, you leap lightly from point to point, ever higher and higher. As you mount, the volume of water increases, and at intervals there are lovely pools fringed with ferns and briars—pools whose retaining walls were built by Nature of twigs and stones and chance waste, manipulated by that wonderful water-power whose echoing roar fills the heart with a strange, exultant awe.

The noise is so overwhelming when you have at last reached the wall of rock with the cataract leaping over it that you shout at the top of your voice to the companion at your side.

"I *must* get up," you say. "I *will* get up to see what is on top."

You search for cracks to put a toe in; you cling to every tuft of grass; you plant your foot on a patch of moss here, a small projection there, and so you advance inch by inch, along the almost perpendicular face of the rock, while the cascade throws its spray over you, and you feel that nothing matters if only you can reach the top!

Then with one last valiant effort the height is achieved; you pull yourself over; and behold, above and beyond another mass of water dashes and foams

over rocks steeper than those you have just climbed; another cataract drops from a sheer height. And beyond that another, and yet another—and still the end is not in sight.

But perhaps the more peaceful pastime of fishing is to your fancy. Then after hunting the gruesome sea-worm when the tide is low and threading him on your hook, you sit long hours in the warm sunshine; you dream, you doze, you watch little shiners dart in and out, or the rock bass sail in dignified parties around your bait. Sometimes you catch a fish, but mostly only bites. I speak as a mere onlooker and hope to be pardoned if I have neglected to chronicle some important piscatorial achievement, both true and rare.

Or do you desire an aquarium? Then search the rocks at low tide and you will find many curious and uncanny specimens: orange and purple starfish, marine flowers (living ones, that look like Japanese chrysanthemums), and horrid things we named Weird Beasts (not knowing their proper name of Sea Cucumber) that resemble bladders, partially filled with water and covered with lumps from which long feelers stretch out at will. The bladders have feelers underneath that serve the purpose of feet, and they can elongate themselves until they look like eels or vile brown and pink serpents, not yet grown to size.

We are not always in peaceful seclusion at our camp on the North Arm. Friends find out where we are and hunt us up; we may even have besought them to do so.

They arrive in great numbers, all on the same day. It is so long since we have seen anyone that we welcome them with open arms and long to entertain them hospitably. We beg them to stay and spend the day, while in the background of our mind lurks an uneasy recollection of the limited number of teaspoons and the last accident that reduced the cups to six.

What matter! Are we not camping? Is not this the simple life, and are there not tins and a tin-opener in the larder, and bark to boil the kettle and toast the bread that came up by steamer only three days ago? 'Tis a feast fit for the gods

to the hungry dozen who at last gather round the table, which is not much bigger than a tea-tray. Everyone uses someone else's fork or plate or spoon, and we all love each other and are happy.

Then comes the departure, and we go out on the point that reaches farthest into the water to see the last of our merry company. They sing songs and wave hands as their boat speeds away, while we sigh to see them go—and rejoice when they are gone!

Down on the sun-warmed rock we drop to watch the sunset, and we amuse ourselves by counting up the points of beauty in our sight:

Item one: Water spreading at our feet like smooth, molten lead, with gleams of blue from the sky and pink from the setting sun.

Item two: Noble rocks rising straight out of the water, covered with moss, so velvety to lie on, so beautiful in every shade of green and gold and brown; wild flowers growing on the sunny ledges, exquisite ferns in the cool crevices; maple, alder, cedar and fir wherever they can gain a foothold; bramble and dogwood and flowering shrubs in the spaces between.

Item three: Grey hills, blue hills, purple hills, all covered in evening mist, and beyond them, peaks where the snow still

lies, now touched to a particular glory as the sunlight lingers there after leaving us in shadow—in shadow and in peace.

The moon rises over the mountains opposite accompanied by one bright star. There is no sound but the rustle of the night wind and the murmur of the water, for the pleasure-boats have all disappeared citywards, with their noisy crews and thumping engines. Perhaps a chipmunk scurries past or a bird gives a brief warble in the bushes; these, too, are items in the *tout ensemble* of charm.

But what desecration to seek to itemize the loveliness of Nature! Do we describe the beloved one as a combination of Grecian nose, liquid eyes, soft hair and carmine mouth? Away with the thought! We cherish the soul and the fair outer body as one precious whole.

And so with Nature. We love her in all her aspects, in all her moods, in big and little things, and the more we know her the better we love her.

Here in our summer camp we love her best of all. We lie on her breast and her arms encircle us. She holds us close and whispers in our ear. We are like the naughty boy in his mother's kind embrace; our angry passions slip away; we are ready to be comforted, and we promise to be good.—M. E. C.

Third Dominion Conference

Memorandum for the Information of the Delegates to the Third Dominion Conference of Fruit-growers

THE following resolutions will be submitted for the consideration of the third Dominion Conference of Fruit-growers by the delegates from the British Columbia Fruit-growers' Association:

That this British Columbia Fruit-growers' Association adopt as a standard apple box for all purposes the box 10x11x20 inches, and that we instruct our delegates to Ottawa to use every endeavor in their power to have the words "*For export only*" expurgated from the Canadian Fruit-Marks Act. Section 325.

That the Association recommend that the four-basket plum crate be 15¾x15¾x4¼ inside.

That the present pear box 18¼x11x8½ be the legal size.

That the peach crate be 18¼x11¼x4½.

That the pear box 8½x11x18¼ be adopted by this Association as a standard box for crab apples.

J. A. RUDDICK, *Commissioner*.

(The above letter has been sent to the British Columbia delegates to the third Dominion Conference, to be held in Ottawa, Ont., about December next, in order that they may prepare to support the wishes of the British Columbia fruit-growers on this matter. Any other suggestions should be communicated to the delegates through the secretary of the B. C. F. G. A., Victoria, B. C.—Editor.)

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

SOMETHING in the nature of famine prices marked the close of the season for Canadian apples in the leading British markets. At Glasgow, for example, Mr. J. T. Lithgow, Canada's trade commissioner at that city, reports that 6d. and 7d. per pound were charged by the fruiterers. By the barrels the small quantities arriving were bought up at forty-five to sixty shillings, according to quality, against the previous average selling prices at the same time of the year of twenty to twenty-four shillings. The average purchaser, of course, could not afford to pay such prices, and buyers must have been people of the classes to whom money is no object where the pleasures of the table are concerned.

Unless fruit prospects in the British Isles have very much changed since Mr. J. M. Mussen, Canada's trade commissioner at Leeds, wrote his last report to the Department of Trade and Commerce it is very unlikely that conditions respecting apples similar to those referred to above will be repeated in the markets of the United Kingdom this present year.

Reports from the British orchards, on the whole, taking the good with the bad, indicate that the probabilities favor fairly good home crops. In the early spring days all forms of vegetation came forward very rapidly, but cold easterly winds and frosts were general all over the country between March 19 and 26, retarding the quick progress that was being made. At that time, however, the buds were not in a sufficiently advanced stage for the frosts to do any injury; on the contrary, the frosts did much good in clearing the trees of various insect pests just as they were beginning to quicken. Cold winds accompanied by sleet were again experienced towards the early part of April, and these are stated to have done some little

damage to the more advanced trees. Since then, however, there has been a continuance of mild weather with refreshing showers which has had a beneficial effect on vegetation generally.

The decrease in Canada's apple exports for the past fiscal year aggregated three million dollars. A great deal of this decreased export, however, was chargeable to the increased home demand. A shortage of supplies, coupled with heavier domestic requirements, reduced the quantities available for the British markets.

Readers of *The Fruit Magazine* who are engaged in the export of dried or evaporated apples will be interested in the following reference to the trade in the latest United States consular reports from Liverpool, Eng.: The sources of supply in Liverpool of dried or evaporated apples are the United States and Canada. Their receipts are not shown separately in the official import statistics, but the imports of dried fruits from the United States into Liverpool during 1910 (not including plums, prunes, raisins and figs) amounted to 2,425 hundredweight, valued at \$23,938. For the year 1909 the imports amounted to 2,295 hundredweight, valued at \$21,125. There are three grades of dried apples usually marketed in Liverpool—"prime," "extra choice" and "fancy." There are no dried apples of the grade "prime" or "fancy" now on the market. The present price of "extra fine" is about \$14.85 to \$15.30 per hundredweight c. i. f. This price is an exceptionally high and unusual one, said to be caused by the scarcity of the supply in the United States and Canada. One of the leading importers states that \$8.50 to \$9.75 may be taken as an average price. The fruit is almost invariably imported as the result of direct purchase by Liverpool wholesale merchants, and is by them sold to the retail dealers. It is packed in boxes

weighing 25 to 50 pounds, principally of the latter weight. There is very little demand for the fruit for consumption in this district, the sales effected being chiefly for ships' use. The demand is a stationary one, and in the opinion of the trade is not likely to expand.

From returns published by the South Australian government the total exports of apples from the Commonwealth in 1910 are stated to have been 866,927 cases, which easily constituted a record. The relative importance of the trade to each state is reflected in the following analysis of the 1910 exports:

From Tasmania	568,390 cases
" South Australia.....	135,174 "
" Victoria	157,578 "
" Western Australia...	8,250 "
" New South Wales...	2,535 "

Shipping arrangements have been made for exporting between 750,000 and 800,000 cases of apples from Tasmania during the season, now in full operation. Nearly all the shipments will be made in London and Liverpool, from which centres trans-shipments can be made to continental ports if better prices are available. It is intended to tranship some 40,000 to 50,000 cases to New York with a view to testing that market. Freight has advanced considerably this year, and—depending on the class and speed of steamers—is now quoted from 61 to 70 cents per case from Hobart to London and Liverpool. The extra freight from New York to British ports is estimated at 40 cents per case. It is anticipated that consignments of Australian apples to the United Kingdom will continue to be made from week to week until the end of July. Up to the end of April the shipments made this season totalled 350,639 cases, from the following states:

Tasmania	212,414 cases
Victoria	111,795 "
South Australia	22,890 "
Western Australia	2,050 "
New South Wales	1,490 "

Dr. P. H. Bryce, of the Interior Department, in an address to the Royal Society here since the dispatch of my last letter to *The Fruit Magazine*, spoke strongly on the subject of conservation of fruit and other supplies. The Cana-

dian people today, he said, are not more concerned in the extensive production of perishable commodities than in providing means for the conservation of our present supply. There is no reason why every farmer in Canada should not have an ice-house and refrigerator. We lack cold storage facilities. We can buy better strawberries from the south today, he said, than we can in our home market. By means of an excellent cold storage system, California fruit arrives on the London markets after twenty days, in better condition than Mediterranean fruit which is only three days' distant. Dr. Bryce contended that the great problem of furnishing food for the rapidly increasing population of the entire world could be solved only by scientific production and economic conservation. In the absence of sufficient canneries and cold storage facilities, Canadians squander more than they sell.

Apropos of better strawberries from south of the border than we get from home producers: our first domestic supplies, or perhaps I should say the first Canadian berries I purchased this year, came from points in Ontario last Friday. The same day berries were also on sale from the States. The long-distance berries from the States were fresh, in perfect condition, most attractive to the eye and perfect to the taste. The domestic berries were, in comparison with the others, in poor condition, bruised and inferior in every way. The American berries had come hundreds of miles under superior cold storage conditions, and the home products had been exposed to unfavorable changes of temperature. The American berries went off quickly at 25 cents a box, while the Canadian berries found few buyers at 15 cents. And there were most assuredly about as many berries in two of the imported fruit-boxes than in three boxes of the domestic product. Everyday experience fully confirms the statement of Dr. Bryce that in spite of all that has been done in Canada for the promotion of cold storage, we still lack sufficient cold storage facilities to enable our fruit producers to enjoy to the full the advantages they are entitled to in competition with shippers to

Canadian markets from points in the United States.

Talking on the subject with one of the most progressive handlers of home and foreign fruits in this part of the Dominion—Mr. C. Moreland, Rideau street, this city—I was told that the system of cold storage for fruit transportation in use on the American roads carrying fruit destined for Ottawa has proved very successful. He showed me the last of a consignment of strawberries from Maryland. They had been four days on the road, and arrived here five days ago, and were still fresh and in excellent condition when I examined them. Under the system referred to, the heat in the fruit cars is drawn off, and the temperature, so reduced, is easily kept down, with such excellent results as I have mentioned in connection with the Maryland strawberries.

I see in the last number of *The Fruit Magazine* a reference to short-measure boxes of strawberries from south of the line shipped to the Canadian side. *The Fruit Magazine* has made a reputation for itself as one of the few publications that recognize there are generally two sides to a story, and is willing to give both sides. Now you will have noticed in a preceding paragraph in this letter that I stated our experience here this season with shipments of early strawberries had been that two of the American berry boxes were found to hold about as much as three of the Canadian. I asked one of our largest fruiterers about it today. "It is simply shameful," he said in reply, "the way shippers up the country are sending in short measure of the Canadian berries. Look at these boxes; they are scarcely two-thirds filled. The American shippers, at least so far as this market is concerned, send boxes as full as they will hold, and after the contents have shaken and settled down in the long railway journey, the boxes are still full; but not so with the Canadian shippers. It should be seen to."

Keep busy and you'll have no time to be miserable.

Many things are well done that are not worth doing.

THE FAMEUSE APPLE

Montreal Island is celebrated for "La Fameuse," a specially tasty, sweet and palatable snow apple. Its origin is unknown, although it is generally thought that the early Sulpician Fathers, who dwelt in Montreal, brought apple-seeds from France, and cultivating some seed that was a "sport" came unawares upon the apple for which Montreal Island is so celebrated. "La Fameuse" has suffered very much from careless and unskilful cultivation. Black knot on the trees has been readily tolerated, no spraying until quite late years has been resorted to, and the wonder is that "La Fameuse" exists at all. While in France its red skin is objected to, in Canada and England the red apple is a favorite. If it were well cultivated and scientifically treated many think this apple would be for an autumn apple without a peer. Of course it does not come up to the standard of the "MacIntosh Red," but the latter is a new apple, and treated as "La Fameuse" has been, it too would lose its supremacy.

EXTENSIVE CIRCULATION

There lives an editor in interior Pennsylvania, Jim Sweeney by name, who has a keen sense of humor. Seeking to increase his fortune, Sweeney once wrote to a prospective advertiser, setting forth in attractive fashion the value of his paper as a medium of publicity. The advertiser was captivated by Sweeney's letter, but, desirous of more specific assurance before he invested his money, he wrote to Sweeney, saying he hadn't heard of the *Trumptown Sentinel*. "Where does it circulate?" he asked. And in his illuminating way, Sweeney wrote back: "The *Trumptown Sentinel* circulates in Europe, Asia, Africa, North and South America, and its just about all I can do to keep it from going to hell."

TRUTHFUL SPOUSE

"Where am I?" the invalid exclaimed, waking from the long delirium of fever and feeling the comfort that loving hands had supplied. "Where am I—in heaven?"

"No, dear," cooed his wife; "I am still with you."

Seedling Apples

THE horticulturist has the opportunity of getting more employment out of this brief and uncertain life than those engaged in almost any other avocation, and as his joy is mingled with his work he becomes an artist after the style of Gideon, Harris, Patten and a large number of others who have made themselves such benefactors to their fellowmen, not only to horticulturists, but to the people of the entire world. He not only puts joy in his work, but he is a philanthropist in every sense of the word, for he has bestowed upon his fellowmen something that could not be purchased by wealth or influence. The propagation of seedling apples or fruit of any variety is one of the most fascinating occupations or pastimes a person can have. If there is anything well known, any fact undisputed among horticulturists, it is that as a rule no tree fruit will exactly reproduce itself from seed. While this is true of all tree fruits, the apple tree is remarkable, in that valuable varieties never reproduce themselves.

The only cases known in pomology where an apple tree is produced the second time from the seed is in cases where they revert back or nearly so to the wild stock from which they originated. *Pyrus baccata* and all such trees are absolutely without any value whatever except to be used as stocks for grafting purposes.

Plant a bushel of apple seed all taken from, say, the Wealthy. While it would be possible, still it would be highly improbable that out of the whole lot of seedlings you would get a single Wealthy tree. This is true of any given named variety. The absolute facts are, technically speaking, that on planting the bushel of apple seed mentioned, when the seedlings are grown there will be no two trees alike in every respect, and what is more, there will be no tree that is exactly like any known tree heretofore grown, with the exception of those which revert back to the original stock as before stated. Many valuable varieties will be

found among them, but all differing in some way from kinds now grown and classified. Consequently, to perpetuate a given variety, grafting or budding in some form must be resorted to.

To produce hardy apple seedlings where very few apples are grown, sow the seeds of apples produced in the locality or as near to it as possible.

Another thing noticed in connection with the growing of apple trees from seed is that an apple seedling that has never been transplanted may be to all appearances quite hardy so far as the old tree is concerned, but when an effort is made to propagate it by grafting, the grafted trees are found to be quite tender. Again we have had seedling apple trees grow until they were seven or eight years old, and be to all appearances quite hardy, carrying a few specimen apples, but just as soon as they would come into full bearing, it was noticed the season following that the tree was nearly dead, the effort put forth to mature a full crop of fruit weakening its vitality to such an extent that it would finally succumb. In connection with this matter, experience has taught that no seedling fruit tree can be classed as quite hardy until it has been grafted in the nursery, come into full bearing in the orchard, passed through a hard winter, then produced a good crop the following summer.

The beginner will now clearly understand that the growing of apples from seedling trees is very much of an experiment, and he should be prepared to meet with many disappointments. But there is a great and pressing need for this kind of work in Canada. This is a line of work that all those who have succeeded in fruiting the large apple can take part in. Save the seeds and care for the seedling trees till they bear fruit.

In collecting seeds save the cores of all large apples used; the seeds are removed with a sharp-pointed knife; all seeds are sown in the fall if possible, as a better percentage germinate the following

spring. If, however, the seeds are saved during the winter they may be stratified, that is, mixed with moist sand in a box with holes in the box for drainage and then placed outside to freeze. The box should be placed on the north side of a building. If the seeds are dry keep them in the moist sand for 24 hours in the house. Before placing outside be sure there is a close cover on the box, otherwise the mice will clean out your seeds even if frozen among the damp sand.

Sow seeds in rows three feet apart and one and a half inches deep, and rather thinly, say eight seeds to the foot. Where the quantity of seed sown is small, the seeds may be sown in beds four feet wide and as long as required; the beds should be bounded by boards eight to ten inches wide, set on edge. The seeds are then sown in drills ten inches apart. As soon as the plants appear above the ground they will be benefited by being slightly shaded from the sun. This is best done by lath screens; the spaces between the lath may be two inches wide. As soon as the second pair of leaves form, the screen may be removed altogether. If the season is dry it may be necessary to water occasionally. When this is done a thorough soaking should be given.

A light sprinkling every day is worse than useless. In the fall the young seedlings are dug up and heeled in outside. In the spring they are planted out in nursery rows, eight inches apart in the row, the rows four feet apart. It is important that some protection be given the young seedlings the first winter. Injury by girdling from field mice will also have to be guarded against. This is usually done by throwing up a light plow furrow against the trees on both sides of the row, the tops of the tallest ones being bent over and covered with earth. The seedlings are left in the nursery row for two years, then each year they are closely examined when in full leaf, the thorny, small leafed ones are cut out and only those with large thick leaves are left to fruit. Those having bearing trees can hasten this by taking scions off the seedlings and grafting them into the bearing trees. In a couple of years they will usually come into bearing, when a fair idea can be formed of the quality and size of

the fruit your seedlings are likely to bear.

This is a line of work that needs many to take part in and without doubt the results will be of great value. Every precaution should be taken to plant seeds of the very hardiest obtainable varieties, as hardiness is the first and most important essential on the northern border of apple culture.

A CHERISHED RELIC

THE following is a copy of the most memorable judicial sentence which has ever been pronounced in the annals of the world, namely, that of death against the Saviour—with the remarks which the *Journal le Droit* has collected, and the knowledge of which must be interesting in the highest degree to every Christian. It is word for word as follows:

Sentence pronounced by Pontius Pilate intendant of the Lower Province of Galilee, that Jesus of Nazareth shall suffer death by the cross.

In the seventeenth year of the reign of the Emperor Tiberius, and on the 24th day of March, in the most holy city of Jerusalem, during the pontificate of Annas and Caiaphas.

Pontius Pilate, intendant of the Province of Lower Galilee, sitting in judgment in the presidential seat of the Prætors, sentences Jesus of Nazareth to death on the cross between two robbers, as the numerous and notorious testimonies of the people prove:

1. Jesus is a misleader.
 2. He has excited the people to sedition.
 3. He is an enemy to the law.
 4. He calls himself the Son of God.
 5. He calls himself, falsely, the King of Israel.
 6. He went into the temple followed by a multitude carrying palms in their hands.
- Orders from the first centurion Quirillis Cornelius to bring him to the place of execution. Forbids all persons, rich or poor, to prevent the execution of Jesus.
- The witnesses who have signed the execution of Jesus are:
1. Daniel Robani, Pharisee.
 2. John Zorababel.

3. Raphael Robani.

4. Capet.

Jesus to be taken out of Jerusalem through the gate of Tournes.

This sentence is engraved on a plate of brass, in the Hebrew language, and on its sides are the following words: "A similar plate has been sent to each tribe."

It was discovered in the year 1280, in the city of Aquilla, in the Kingdom of Naples, by a search made for Roman antiquities, and remained there until it was found by the commission of arts in the French army in Italy. Up to the time of the campaign in Southern Italy, it was preserved in the sacristy of the Carthusians near Naples, where it was kept in a box of ebony. Since then the relic has been kept in the chapel of Ceserta. The Carthusians obtained, by their petitions, that the plate might be kept by them, which was an acknowledgment of the sacrifices which they made for the French army. The French translation was made literally by members of the commission of arts. Denon had a *facsimile* of the plate engraved, which was bought by Lord Howard, on the sale of his cabinet, for 2,890 francs. There seems to be no historical doubts as to the authenticity of this. The reasons of the sentence correspond exactly with those in the Gospel.

GOOD ADVICE

"Dad," said the country youth who had just graduated from the district school, "I have long cherished a desire to go on the stage and have at last decided, with your permission, to——"

"My boy," interrupted the old granger, "all the world's a stage. You hitch the mules to the big red plow and transfer the outfit to the ten-acre lot behind the barn, where you can enact the star role in that beautiful drama entitled 'Down on the Farm.'"—"Chicago News."

GREAT EXPECTATIONS

"Where are you going with that goat, little boy?"

"Down to the lake. Come along if you want to see some fun. This goat has jist ate a crate of sponges, an' I'm goin' down to let him drink."

KAMLOOPS, B. C.

THE city of Kamloops, which is the most important business centre on the main line of the Canadian Pacific Railway between the city of Vancouver, B. C., and Calgary, Alta., is beautifully situated on the south bank immediately at the confluence of the north and south branches of the majestic Thompson River, both of these branches being navigable for a considerable distance. The wisdom of the pioneer traders in the service of the Hudson's Bay Company in selecting this spot as the pinnacle from which their immense trade was to radiate through the whole of this vast interior was more than fully justified and made complete when several years later the Canadian Pacific Railway Company also determined their selection for a divisional point in the interior of British Columbia. The city of Kamloops with its population of 4,500 enterprising, contented and prosperous people is a most beautiful residential spot; its residences are neat and attractive in appearance; gardens and lawns are everywhere to be found. Its business concerns embrace every branch of commerce and a large volume of business is transacted, it being the distributing point for and the commercial centre of the extensive stock-raising and farming section by which it is surrounded. It is also the headquarters of the several mining camps in the vicinity. Its stores are well stocked, the demand necessitating the carrying of large stocks of merchandise far in excess of what is generally found in towns of the same size. It has three banks, five churches, drill hall, private club, public halls, opera house, brewery, cigar factory, machine shops, sash and door factory, canning factory, steam laundry, two newspapers, one issuing daily and weekly editions and the other issued semi-weekly; Dominion and Provincial Government offices, registry office, mining recorder, gold commissioner, land agent, customs officer, etc., commercial telegraph office, local and long distance telephones, up-to-date sewerage system, electric light and waterworks owned and operated by the city, sawmills, hospitals, infantry and cavalry militia units, rifle association,

farmers' institute, fruit-growers' association, mining association, board of trade, etc. In brief, it possesses all the advantages to be found in any modern Canadian city.

Kamloops district is situated in what is commonly spoken of as the dry belt. The air is dry and bracing and the rainfall very light. In summer the thermometer seldom rises higher than 90 degrees, the temperature usually ranging between 65 and 90 degrees. In the winter season cold weather is a rarity. As a rule the temperature ranges between freezing point and zero, occasionally dropping a few degrees below and rarely reaching 12 degrees, and then only for a day or two.

While in the Kamloops district proper there is a very light and insufficient rainfall, other localities to the north and east tributary to Kamloops are favored with more abundant moisture, and in such localities there is a heavier snowfall, the snow lying on the ground for a longer time.

The surrounding district of rich fertile soil, all of which is linked to the city by excellent wagon roads, also abounds in wealth of mineral and timber, all of which are now experiencing appreciable commercial activity.

All the choice varieties of large fruits are successfully grown and small fruits in abundance. Wheat, oats, rye, barley, peas, clover, alfalfa, rape and corn yield abundant crops. Roots and vegetables of all descriptions yield well.

The city of Kamloops is the acknowledged chief of the live stock centres in the interior of British Columbia. It is also the centre of an extensive lumbering district. Its immense surroundings and adjacent country produce some of the finest fruits grown in the province, both large and small. Apples, especially, attain immense size and superior quality.

Since it was determined that in addition to the C. P. R. main line the Canadian Northern would also pass through Kamloops the city has improved very much and real estate has advanced in price rapidly. The building permits for March and April of the present year amounted to \$234,364 and a bright future is certainly in store for what is

often called "the Inland Capital of British Columbia." The future of this splendid commercial centre depends upon the judicious development of the surrounding agricultural lands.

CULTIVATION

By R. GLENDINNING, Somenos, B.C.

CULTIVATION, to the ordinary mind, means dragging an implement with blades through the soil, at any depth, with the purpose of uprooting the weeds. But there is a far more important use for cultivation than the mere destruction of weeds; we refer to the preservation of moisture.

There are two methods by which the moisture content of the soil is lowered; first, through drainage; second, by evaporation—the latter in some soils accounting for as much as 50 per cent. of the loss of water.

Now, a small book might be written on this fundamental practice, but we will confine ourselves to the method to be employed in orchards on the British Columbia coast, where irrigation is not practised.

When to start is a question often asked, and the answer is governed by the amount of rainfall and the situation of the orchard. Where the land is inclined to be dry—so dry as to check growth and the proper swelling of the fruit—cultivation should be started as early as possible, that is, when the soil has lost sufficient of its moisture to make the going easy, and the soil does not bake afterwards, which is especially liable on heavy clay soils, but not so on sands and sandy loams. So we may safely say cultivation should begin earlier on sands than on clays.

How deep to go is another important point, and as we have to look at these things from a commercial standpoint, we do not want to waste time and money by doing more than is necessary. Cultivation, we know, makes the spaces between the soil particles more numerous, thus making it difficult for the water to pass upward, so when we have a sufficient depth of this opened-up soil the passing of water is severely checked, and very little is lost by evaporation. This depth has been the object of numer-

ous experiments all over the world, and for all practical purposes three inches is as efficient as twelve; but here again the variety of soil modifies the operation. Clay soils have extremely small particles, the water climbing easily by the small steps; sandy soils, being composed of larger particles, are slower in rising, and consequently more easily stopped. Though sand will raise more water in a given space of time than clay, it will not raise it from the depth that the finer particled clays will.

The next important point to be considered is the frequency of cultivation. Here again we have to consider the expenditure of time and money and cultivate only when necessary. One golden rule to remember is to start as soon after rain as the condition of the soil permits, as the rain will have compressed the loosened surface mulch you made by cultivating, and set up capillarity again; thus the rain, plus the soil moisture, is evaporating till you can again break up the soil particles and stop capillary attraction. If the rainfall was small and cultivation deferred, the shower would have lessened the amount of water in the soil, by itself evaporating and taking with it some of the previously fallen moisture. So remember the golden rule above if you want to take advantage of small rainfalls.

Finally, with regard to the sort of machine to use. There are endless varieties to choose from, but they may be classed into two kinds—large-toothed and small-toothed—and except for the first time of going over in the spring, the small-toothed cultivators do the more thorough work by breaking up the soils more finely, and leaving the surface more level, which will not lose so much by evaporation as a ridged surface.

If very weedy, big blades will be found more satisfactory, as numerous small blades get choked.

A farmer had a son and did not know what business to start him in. So he put him up in a room in which there was nothing but a Bible, an apple and a dollar.

He decided that if after a short time he found the boy eating the apple he

would make him a farmer; if reading the Bible he would train him for the church; and if he had pocketed the money he would make him a stock-broker.

Entering, he found the boy sitting on the Bible and eating the apple, with the dollar in his pocket. He became a "politician."

THE CHOICE

If I, from Memory's armored chest,
Could pluck the scene that I love best,
I'd take an orchard, gnarled and old,
Where apples turn to spheres of gold,
And stretching far, on either hand,
A broad expanse of meadow land.
A sky above them, deeply blue,
That smiled upon the scene, and You.

If I could choose, I'd have the time
One perfect day, in autumn's prime;
When at your side I wandered, free
As winds that kissed the neighboring
lea.
The hour, just four o'clock, I know,
Though that was twenty years ago.
Dew-laden breezes 'round us blew,
Caressing fruit, and trees, and You.

If I, from Memory's armored chest,
Could pluck one scene, and leave the rest.
I'd let it be that orchard old,
Where apples turned to spheres of gold.
I'd see the love-light in Your eyes,
That now look out on Paradise.
And Earth should charm my soul anew
Holding my own lost Youth and You.
—Lalia Mitchell.

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AN INDEPENDENT LIVING FOR YOU

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OWNERSHIP of a 15-acre fruit farm in the "Paradise Valley" means all these things to ambitious men, energetic men, men who are willing to work hand-in-hand with Nature for their own betterment.

The "Paradise Valley" is not only supremely favored as a fruit-growing area, but it is one of the pleasantest places to live that you could possibly wish for. As the owner of a farm here you can spend your summers in what is perhaps the most healthful spot in all Canada, where the scenery is fine, and you can hunt, fish and enjoy yourself to your heart's content.

Even if you do not wish to move to the "Paradise Valley" immediately, remember that your money invested in a fruit farm here will grow faster than in a savings bank, and be equally secure.

Splendid Situation

The "Paradise Valley" is situated about twenty-five miles north of Kamloops, on the North Thompson River, a navigable stream, which affords a cheap way of shipping fruit. The final survey of the Canadian Northern Railway passes through here to the Peace River country and south to Kamloops. At Kamloops both the C. P. R. and the C. N. R. will connect the "Paradise Valley" with the eastern and western markets.

The "Paradise Valley" has a great advantage over other fruit lands in being in the famous Kamloops dry belt. The annual rainfall is only a few inches as against six feet on the coast. Thus the trees do not suffer from fungus diseases engendered by dampness, and the fruit is juicy, of high quality and free from the woody fibre caused by too much moisture. Physicians consider the air so healthful that several sanitariums have been established at Kamloops.

Rich Soil

The soil in the tract owned by Mr. Curtin is of exceptional merit. The contour of the land assures perfect air drainage and freedom from frost. This property gets the sun during the long summer and autumn afternoons. Thus the fruit has an incomparable color, and the dryness and crispness of the atmosphere imparts a texture, firmness and flavor which secure for it the highest market price.

In purchasing this property Mr. Curtin did not rely upon his own judgment alone, but called upon the most experienced specialists in their distinctive lines for their opinions.

"The nature of the soil and the climatic conditions and freedom from winds make 'Paradise Valley' exceptionally well favored for the development of high-grade fruit."

S. S. GORDON, Horticulturist
Formerly of the Fraser Valley Nurseries

"The soil is of the richest character, and the arrangements for irrigation will provide ample water for both irrigation and domestic water supply."

H. K. DUTCHER, M.Sc.
Dutcher, Maxwell & Gregory, Engineers.

Plenty of Water

Mr. Curtin is ensuring a perpetual water supply on his property in the "Paradise Valley" by conducting the water from Lake Badger and two other lakes, covering an area of 600 acres, over the property by a series of lateral canals and ditches.

The valuable location, rich soil, fine climate and ample water supply make "Paradise Valley" one of the most select fruit-growing districts in the whole province. The opening up of the vast Peace River country offers vast new markets which "Paradise Valley" is conveniently situated to supply. When the line of the C. N. R. through the property is completed real estate in this particular section will multiply in value many times. To the shrewd and far-sighted fruit-farmer or business man the proximity of this choice property to the railway should be enough to make him cast a longing eye upon it.

Liberal Selling Plan

Before placing "Paradise Valley" fruit farms on the market, Mr. Curtin devised a plan extremely liberal and so broad in its scope as to enable the man who would, ordinarily, invest his money in a non-revenue-producing city home, share in the big profits to be made in the "Paradise Valley," by cultivating the soil.

Mr. Curtin's plan, in brief, is to clear the land, plant it to orchard, fence it, irrigate and build for the purchaser a five-room cottage or bungalow, to suit his own ideas and requirements. This saves buyers a great deal of hard work and worry, enabling them to move on the land whenever they are ready and make money from the very beginning. The trees are selected with the greatest care and experienced horticulturists lend every assistance to those who are taking up the work for the first time.

A cash payment of about \$1,000 secures one of these 15-acre farms, and the terms on the balance are very easy.

Everybody interested in fruit-growing and the fruit farms of British Columbia should write for booklet or visit Mr. Curtin's office, suite 305, Dominion Trust Building, look over photographs and maps of the "Paradise Valley" and, if possible, make arrangements to visit this beautiful spot.

Sherman H. Curtin

305 Dominion Trust Building

Phone Seymour 1234

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THE FRUIT MAGAZINE

Maxwell Smith, Editor.

*NATIONAL IN SCOPE AND WORLD WIDE
IN ITS SYMPATHY AND INFLUENCE.*

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If I Should Die Tonight

By ROBERT C. V. MYERS

If I should die tonight
My friends would look upon my quiet face,
Before they laid it in its resting place,
And deem that death had left it almost fair,
And laying snow-white flowers against my hair,
Would smooth it down with tearful tenderness,
And fold my hands with lingering caress—
Poor hands, so empty and so cold tonight!

If I should die tonight
My friends would call to mind with loving thought
Some kindly deed the icy hand had wrought;
Some gentle word the frozen lips had said;
Errands on which the willing feet had sped,
The memory of my selfishness and pride,
My hasty words, would all be put aside,
And so I should be loved and mourned tonight.

If I should die tonight
Even hearts estranged would turn once more to me,
Recalling other days remorsefully.
The eyes that chilled me with averted glance
Would look upon me as of yore, perchance
Would soften in the old familiar way;
For who would war with dumb, unconscious clay?
So I might rest, forgiven of all tonight.

Oh, friends, I pray tonight
Keep not your kisses for my dead, cold brow;
The way is lonely, let me feel them now,
Think gently of me; I am travel-worn;
My faltering feet are pierced with many a thorn.
Forgive, O hearts estranged, forgive, I plead!
When dreamless rest is mine I shall not need
The tenderness for which I long tonight.

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AUGUST, 1911

No. 5

Education in Agriculture

AGRICULTURE in the public schools is a subject that has received considerable attention in *The Fruit Magazine*, and we are pleased to reproduce here some of the remarks of Dr. Withycombe at the Roseburg Chautauqua, Ore., recently. Dr. Withycombe said in part:

"It is fortunate indeed that the one-time popular prejudice against higher education for the farmer is rapidly disappearing. This is plainly shown by the records of our agricultural colleges. The report of the United States Commissioner of Education for the seven years preceding 1909 shows an increased enrolment in the various courses in agricultural colleges; in the engineering courses it was 66 per cent., while in the courses in agriculture it was 138 per cent.

"This excellent showing made by our agricultural colleges should be supplemented by our primary and high schools. It is here where the real foundation must be laid for a successful agriculture. The public school must become the recruiting ground for the farm. Vocational training should become an active factor in our public school work. There is perhaps less than two per cent. of the children of rural districts who go on to higher institutions of learning, and not to exceed five per cent. who even attend high school. This would indicate without question that if the average country boy is to learn anything of technical agriculture it must come through the primary school.

"The advocacy of agricultural instruction in the public school is not a new

idea, neither is the thought of establishing agricultural colleges a comparatively modern one. Alexander Campbell, founder of the Christian Church, seventy years ago declared that agriculture ought to be taught in all of its branches from the infant school and upwards to the last lecture in the last course. Nearly one hundred years ago Governor De Witt Clinton, of New York, recommended a complete course of agricultural education. That great seer of all early agricultural writers, Marshall, in his *Minutes of Agriculture*, 1774, says:

"The wastes of England are numerous and extensive; and the gentleness of the rising generation is inauspicious to this country, at least to its constitution; would it not be politic in the present race to check the torrents of dissipation and effeminacy, by teaching their offspring to think and act with manliness, in colleges of agriculture, reared in those wastes which now are a shame on their country?

"Let agriculture be the primary object of these establishments where actual wastes do not occur, plant them in the least populous districts. Admit all degrees of men, from the peasant to the prince. Let every student handle the plow, wield alike the pring and flail and eat the bread he has aided Nature in producing. Let the process of experimental agriculture be considered as their employment. Let their amusements be the chase and observatory excursions, their studies the theory and the appendages of agriculture.

"The theory of agriculture, therefore, ought not to be neglected; but let it be

such architecture as may convey moral lessons to the minds of the students; let ingenuity give place to simplicity, and elegance to greatness.

"Let each college be a regular fortification, supplied with artillery, arms and ammunition; let every student be a soldier; let regular guard be kept and field days be observed; let tactics and fortifications be their studies; racing, wrestling, boxing, fencing and swimming to the amusements of their department.

"Let each college be a court of moral justice; let virtue be borne in triumph and vice punished without reluctance; let ethics be taught in their fullest extent and let this leading truth be inculcated."

"Our present agricultural colleges are largely based upon the fundamental principles enumerated by this early writer, yet they reach but a very small portion of our population to whom agricultural education is of vital interest. The want of education and inspiration of the farm is perhaps where lies the cause of the drift from the country to the cities and towns.

"Oregon is pre-eminently an agricultural state, a land rich in the opportunities for profitable farming, yet our towns and cities are largely congested and the country woefully neglected. There are in Oregon, according to the last United States census, 45,128 farms, representing a population of about 225,000 people, or less than the population of the city of Portland. If Oregon were strictly a manufacturing state the large city and town population would be warranted, but instead agriculture is really the great field of endeavor. The country cannot hope to come fully into its own until more of our country boys are impressed with the opportunities presented by the farm. A potent factor in opposition to rural development is the altogether too frequent inefficiency of the country school. Many well-to-do farmers, in an effort to educate their families, move to town. This frequently proves the death knell of the family interest in country life. It is really pitiable to see the sons of former prudent, thrifty farmers filling common-

place positions in town at nominal salaries when, if taught early in life to appreciate fully the dignity and honor of the position of a truly modern agriculturist, they might have been in the country as men among men.

"There is no intended reflection upon the thoroughly up-to-date professional or business man of the city, but the country boy in an ineffectual attempt to do city stunts is to be pitied. Frequently, perhaps, parents are to blame for the want of a due respect and appreciation of their profession, for farming indeed is a profession—'the oldest art, but the newest science.' There is no place in all of the realm of human activities where a combination of labor and learning is more essential than upon the farm.

"Let us search diligently for the apparently occult influences which cause the abnormal influx from country to city, and if it be our schools let us without delay set about to make the proper correction. If the consolidated rural school is the solution to the problem, let us by all honorable means speed the day for these consolidations. If the country high school is the solution, let us have the high school, for the initial cost of such schools, high as it may be, is as nothing financially to the value of a strong, virile, patriotic agriculture to any community. It has been rightly stated that all wealth comes from the soil, but without a general and proper understanding of the possibilities of the soil but a relatively small proportion of wealth can be gotten therefrom.

"What is really needed is a more general enthusiasm and agricultural optimism among the farming population. Farmers should have a higher estimation and keener appreciation of their vocation. So long as the farmer himself remains passive as to the introduction of agricultural studies in the public schools, just so long will agriculture fail to appeal to the more aggressive type of country boy. Paradoxical as it may seem, the movement for agricultural education finds its strongest supporters among business and professional men rather than in the ranks of the practical farmers. The city man appreciates the full

value of education and thorough business organization, and we trust a larger proportion of our farmers will soon be classed as progressives in the field of technical and industrial education. It is encouraging to know that a number of high schools in the state have added within recent years agricultural instruction and other industrial work to their curricula. Ashland contemplates doing some horticultural field work in connection with the high school, and through recent press reports we learn that Hermiton intends to operate a small farm in connection with their high school work in agriculture. This is certainly a long forward step. The beneficial effects of this good work will soon be in evidence in these communities. It is to be hoped that high schools will rapidly multiply in our state and that in those high schools not only will adequate provision be made for agricultural instruction, but wherever practical an opportunity for field work in agriculture be also given. In fact, it is thought that if every rural high school had a demonstration farm attached thereto it would be greatly to the financial interest of the state. These farms could not only be made the means of demonstrating correct principles of agriculture to the farmers of the community, but could serve the double purpose of being utilized for giving technical and practical instruction to the high school students as well.

"There is no place where knowledge is more potent in results than when it is disseminated through the activities of the farm. The knowledge that creates a deep-seated love for country life and brings an abiding devotion to the problem of a rural environment. A country beautiful and profitable should be the aim of the student in agriculture."

BACK TO THE LAND

THE social ostracism that once characterized agriculture is fast passing away. While there are still people in cities and towns who look upon the farmer as a being beneath them in social status, and his calling as one in which no person who aimed for distinc-

tion and preferment would engage in, many men of wealth and social position are turning to the land. A noticeable movement in this direction is going on in Canada. During the past few months several men of wealth and high social position in Toronto have purchased farms in the neighborhood of that city. Though they may not personally engage in farming, the fact that they are acquiring farms and fitting them up to be farmed in a businesslike and up-to-date fashion shows that it is not a mere pastime. It is becoming fashionable to own and operate a farm, and whether these citizen farmers make money on their venture or not, they will get the farmers' viewpoint and become more or less champions of his interests and advocates of more attention being paid to agriculture by the governments of the day. One thing that has helped to make the farmer in Great Britain the best farmer the world over has been the interest taken in agriculture by the nobility and gentry of the United Kingdom. The farmer of the Old Land experiences no social ostracism because he is engaged in tilling the land. And the movement in this direction has set in in the new world.—Canada Farmer.

WOULD YOU?

"You are the first man I ever permitted to kiss me."

"And you are the first girl I ever kissed. Will you marry me?"

"I wouldn't marry a liar."

"I would."

AS USUAL

An important report on markets and fruit conditions generally in the West, issued by the Department of Agriculture of British Columbia, on behalf of the British Columbia Fruit-growers' Association, dated at Victoria, July 20, did not reach the office of *The Fruit Magazine* until after our forms for this number had been closed, July 24. Four full days from Victoria to Vancouver is a long time!

Fruit-growers, Guard the Bees

IN a recent issue of the Weekly Globe and Canada Farmer, Mr. A. Klugh, of Kingston, Ont., has this to say on a matter of vital importance to every fruit-grower:

"The fact that the first short course in apiculture has been held at the Ontario Agricultural College this year draws special attention to this very important branch of agriculture. Perhaps it may be thought wrong to describe it as a branch of agriculture, but it really is so, and in Australia it goes under the name of bee farming. It is to be hoped that our farmers will follow the lead which the O. A. C. has set, and endeavor to take advantage of the skilled advice placed at their disposal, for there is more in the subject than the mere acquisition of so many pounds of honey to be obtained every year as a kind of side line.

"Attention is also called to apiculture because just now a disease has appeared in Great Britain among the bees which is causing very great consternation, and which, so far as I have been able to ascertain, has up to the present baffled inquiries as to its cause. It is called the 'Isle of Wight disease,' because it appears to have originated in that beautiful little island. Our farmers have grown so accustomed to having expert advice afforded them on every problem that affects their industry that it may make them appreciate this more when they hear the complaint made in Great Britain: 'In other countries there are bee sections of the agricultural departments looking after such matters; in Germany, Hungary, Switzerland, the United States, Canada and New Zealand the craft has government help,' and that application has had to be made to the government by the British Beekeepers' Association for a grant for research work and legislation dealing with bee diseases on lines similar to those governing diseases of animals.

"The disease appeared first in the Isle of Wight in 1904, since which year it

has practically ruined the beekeeping industry in the island. The principal bee expert has been investigating and experimenting ever since the appearance of the disease; he treated it for two years as infectious and for three as non-infectious, but has arrived at no conclusions, except the unhappy one that beekeeping in the Isle of Wight is hopeless, and that, as scientific investigations of the bees have all so far been abortive, the time has come to see whether any disease has got into the pasturage. The latter conclusion is shared in by another expert, who thinks that the cold and wet of four bad seasons have affected the pollen in the flowers, and that it is probable there is a fungoid growth on the pollen which has affected the bees. In 1909 the disease had spread to the mainland, and it is now reported in Hampshire, Dorsetshire, Sussex, Surrey, Kent, Middlesex, Berkshire, Bedfordshire, Hertfordshire, Buckinghamshire, Devonshire, Worcestershire, the Midlands, and five cases have appeared in far-away Scotland. Even the apiaries at the Swanley Agricultural College have been wiped out. If anyone will take a map of England and follow these various counties he will be able to trace how diseases spread, though, unfortunately, we have many similar examples here both as regards diseases and insect pests. The potato beetle is a bad proof of the latter. It is estimated that in Hampshire, Surrey and Buckinghamshire alone 5,000 colonies have been lost from the malady during the last few months. The honey season this year has a dreadful shadow cast upon it by this mysterious disease. For thousands of people the bees in Great Britain are the rent-payers. Almost every day in all directions fresh outbreaks are being discovered, and, according to reports, the worst of the outbreak has not yet revealed itself.

"But in addition to the loss of the bees and the expected harvests of honey, the fact that the malady is ravaging the hives in several of the principal centres of

fruit culture is viewed with daily increasing anxiety by fruit farmers. As we all know, bees have a very important economic part to play in agriculture. The cry has been heard that if there are no bees there will be no fruit, and the National Fruit-growers' Association have joined in the demand that the government investigate the disease. It is perhaps unnecessary to say that pollen is the bees' food as well as the fecundating element in blossoms, so that while the bees are hunting about for it and among it they become dusted with it and thus carry on a great work of fertilization. Of course, there are other agencies such as the wind, the birds, and not unlikely slugs and snails. Some flowers are so constructed that they are self-fertilizing.

"Most of us also know that without bees large crops of good fruit cannot be obtained, and it is one of the provisions of Providence that the fruit blossoms, with all their wealth of nectar for the bees, appear before the attractive summer flowers. The beneficial influence of bees on fruit trees has been pointed out in Canada, and Mr. T. W. Cowan, the chairman of the British Bee-keepers' Association, emphasizes it. He says that the unfruitfulness of trees may not unreasonably be considered due to a scarcity of bees, and quotes instances of orchards which were unprofitable till a few hives of bees were introduced. He also points out the need for cross-fertilization of fruit trees if the finest fruit be desired, or indeed in some instances if fruit is to be produced at all, since certain trees are self-sterile and can only therefore be rendered fruitful by pollen conveyed to them by other trees. The crossing of one variety with another, he claims, produces the largest and best flavored fruit. Therefore a mingling of varieties in an orchard rather than a mass of trees of all of one variety is desirable. And as the wind is not always to be depended upon to bear the pollen from tree to tree, he advises an apiary within two miles of the orchard or a number of hives placed specially among the trees.

"The horticultural instructor to the local county council of the Isle of Wight

has come forward with the suggestion that, owing to the annihilation, practically, of the bees, all fruit-growers should where possible take steps to carry out the work which bees are known to accomplish in the distribution of pollen to ensure fertilization. A good wind, if unaccompanied by a low temperature, will, of course, answer the purpose to some extent, but so many trees open their flowers in batches that the necessity arises for a system of daily distribution. He therefore advises growers to tap or shake the trees about noon daily during fine weather, and the more sheltered the position in which the trees are growing the more necessary is the operation. Keen observation since the deprivation of the bees has convinced him that a systematic course pursued in this way will result in heavier crops.

"The lessons contained in the foregoing particulars are so obvious that it is quite unnecessary to dilate upon them. The warning is that, should the disease appear here, for which a sharp watch should be kept, steps must be taken at all costs to stamp it out at once."

WORK

What are we set on earth for? Say, to
toil;
Nor seek to leave thy tending of the
vines
For all the heat o' the day, till it declines,
And Death's mild curfew shall from
work assoil.
God did anoint thee with His odorous
oil,
To wrestle, not to reign; and He as-
signs
All thy tears over, like pure crystallines,
For younger fellow workers of the soil
To wear for amulets. So others shall
Take patience, labor, to their heart and
hand.
From thy hand and thy heart and thy
brave cheer,
And God's grace fructify through thee
to all.
The least flower, with a brimming cup
may stand
And share its dewdrop with another
near.

—ELIZABETH BARRETT BROWNING.

Home of the Vikings

IN the May number of *The Fruit Magazine* we published an article on the subject of the "Only Tree in Shetland," and a correspondent promptly questioned the correctness of our account in a communication to a Vancouver daily paper. The following reference to "The Home of the Vikings" in the "Westminster," by M. James Faulds, would seem to confirm the correctness of our previous article. Mr. Faulds says:

"It is impossible to forget one's first visit to Lerwick, the enchanted capital of the Shetland Isles. After tossing for fifteen hours in the Pentland Firth one may be a little lightheaded, but surely Lerwick on a June morning seems a veritable city of romance. Its fabric is grey, but clean, wholesome grey, and overhead are the wonderful Shetland skies; what colors are more romantic than blue and silver and grey? The irregular little winding streets, paved over their entire breadth with great flagstones, call up sudden whimsical memories of the Arabian Nights. But only for a moment, for what has Haroun Al-Raschid to do with the salt tang of the sea air, the musical Norse accent of the crowding townsmen, and the wild cries of the splendid sea birds? Do not dare to pronounce 'Lerwick' after the mean British style which strikes the 'w' out of 'Berwick.' For here you are among the very people of the 'Wick,' the people of the harbor or bay, the descendants of the ancient 'Vikings,' to whom the 'w' is the mark of aristocracy. Lerwick has scarcely five thousand inhabitants, but it is a miniature metropolis, the seat of government, education and fashion. It is not just another little town; it is the capital of Ultima Thule.

"But if the islands would be incomplete without Lerwick, so would Lerwick without the islands. There are about a hundred of these, the last outlying fragments of the Scottish mainland, fronting the gales of the Northern Sea like a herd of sheep clustered

before the storm. No more magnificent rock scenery can be found in the British Islands, especially on the western shores where the most mighty ramparts of rock are scarcely enough to withstand the fury of the waves. 'On the west side of the Shetland Islands,' says Professor Geikie, 'the fury of the Atlantic has produced scenes of devastation which it is hardly possible to describe. In stormy winters huge blocks of stone are overturned, or are removed from their native beds to a distance almost incredible.

. . . The result of this constant lashing of the surge has been to scarp the coast of the Shetlands into the most rugged and fantastic cliffs, and to pierce them with long twilight caves.' One may see here and there along the coast great blocks of red porphyry, as if quarried and almost ready to form the supporting base of some immense bridge, tossed up on the higher levels like gravel and left there, out of reach of the ordinary tide, till the next storm may again make them its playthings. The Atlantic waves when roused will throw their topmost surf over cliffs hundreds of feet high, and there can scarcely be any grander sight in Nature than the battle of the cliffs on a winter night when the tremendous force of the ocean is flung again and again and again upon the long solid lines of rock towering into the darkness, where the hollow caves resound and the roar of wind and wave makes it impossible for human voice to be heard. Not only in their height, which is often many hundreds of feet sheer from the water's edge, are these cliffs impressive, nor in their ruggedness, which gives them often an expression like that of a racial strength of character, but in their coloring also they catch and hold the eye. On one and the same lofty front you may sometimes see half a dozen strata of different coloring, arranged after Nature's pattern—white, and grey, and red, and brown, and black.

"Splendidly as the protecting cliffs

guard these islands from the invading sea, they cannot everywhere beat back the enemy, and it is indeed the closeness of the battle which gives to the Shetland Isles part of their undying charm. For the shore line is pierced at innumerable points by long inlets known as 'voes,' and it is said that at no spot on the Shetland Islands can you be further than three miles from the sea. These 'voes' are commonly quiet channels with low hills on either side, but sometimes they take on the aspect of a Norwegian fiord. Caves abound everywhere and sometimes the seal may be seen plunging in the dark green water.

"To some it may be a surprise to learn that there are no trees in the Shetlands. What can a landscape be without trees, the trees which are so silent to the man of the forests, so eloquent to the man from the desert or the prairie, the trees with their 'dear over-beautiful leaves?' Yes, one misses the trees, but immediately one finds compensation in the wild flowers, not to speak of the magnificent rocks and the wonderful skies. One remembers hearing a Shetland lassie speak of the 'trees' in her garden. When a lifted eyebrow and half-question showed her companion's doubt she at once replied naively, 'Yes, the gooseberry trees and the currant trees!' But of the wild flowers there is a wonderful wealth both of form and color. Nature seems to perform in the Shetlands the same kindly office that she does on the prairie, where there are no trees to speak of, but plenty of wild flowers. In the Shetlands there are actually no trees at all, except a few near Scalloway, but the wild flowers, fresher and purer than any Chaucerian picture, are a charm beyond words.

"The Shetland skies are an endless wonder. They are often grey, indeed, and full of rain-clouds—and it would be a lost labor of love to try to persuade a true-born Canadian that there is beauty in a rain-cloud or even in the grey and silver draperies of the sky. But when the summer sun conquers the rain there is a deep blue in the skies and a fair 'candor' in the clouds which are to be found nowhere except in the North Atlantic. The radiant sunshine is all too

rare in Shetland, but when it does fill the air it reveals in the bare landscape of rock and moor a wealth of character in detail not suspected before and most interesting to discover. Perhaps there is a wise husbandry in the sparing gift of sunshine, for in the summer time the long evening light prevails. Then whosoever will may read in the open air at midnight or even take photographs of the Town Hall clock in Lerwick to convince the doubter.

"The people of the Hebrides, the western isles of Scotland, are Gaelic. But the people of Shetland are of Scandinavian blood. In the famous centuries of the Norse raids upon the coasts of England and Scotland these northeastern isles were made the half-way house to the mainland, and the old Pictish inhabitants became the slaves of the conquerors. In the ninth century Harold the Fair-haired became the sole king of Norway and subdued the pirates of the Shetlands and the Orkneys, who were now ravaging Norway as well as Scotland and England. The 'Jarl' whom he appointed over them was Ronald, the father of Rolf, the conqueror of Normandy, and for six hundred years after this the islands were ruled, under feudal lords, by the king of Norway. But in 1468 they were assigned to the Scottish Crown, in 'wad-set' or pledge of the dowry of the Norwegian Princess Margaret, who was married to James III of Scotland. As the dowry was never paid the islands remained in the possession of the Scottish kings and so passed on, in this half-romantic, half-commercial way into the realm of the United Kingdom. The Shetlanders of today are a most interesting people, whether in town or country. The people of Lerwick and Scalloway, the only towns, are proud of Scandinavian tradition, but naturally the people of the countryside, the crofters, preserve the old racial character more distinctly. It is in the 'towns,' as the little hamlets are called, or in the remote cottages that we see the real children of the Vikings, the people who are of the blood royal and scarcely think of it. These people have indeed suffered from

the remoteness of their island homes, from the poverty and loneliness of centuries, from the crushing burden of a prolonged feudalism, but they are still a simple and noble type and as different, withal, from their cousins of the Scottish mainland as can well be. They have none of the intense theological interest of the old Scottish peasantry. They are emotional rather than reflective, though of a keen native intelligence, sombre at times and melancholy—with an undercurrent of wistful imagining—but fond also of music and the dance. There is nothing gross about their appearance, for they live frugally. Though not a tall race they are often vigorous and handsome. They are courteous and kindly, rather subtle, fearless in some things and strangely timid in others. The more modern cottages are plain but clean-looking and strongly built, but many of the older houses, or rather huts, are pitifully unfit to be the homes of men and women and children. Picturesque as these little 'towns' are in the summer time, they can only be frowned at by anyone with the least smattering of sanitary science. Why are they not improved? Remoteness, ignorance, poverty are the answers, and for these the golden age comes slowly.

"Most of the country people of Shetland are crofters. The crofter rents a tiny piece of ground, the soil of which is commonly poor enough. This little croft he diligently cultivates, but the produce is not enough to keep himself and his family. Our crofter is, however, a fisherman also, and may be away from home for weeks and even months at a time. Who attends to the croft when he is away? The wife and children. Is the crofter ungallant? Not so; it is stern necessity that commands him. The crofter's wife is no common woman. She not only manages the household and works the little farm when the husband is away, but she digs the peat on the moors, brings it home on her back and provides a new income by her skill in weaving and knitting the famous Shetland wool. Nay, more, at the very time when she bends her back under the weight of the straw 'kishie' filled with peats she enlivens the moor-

land path or the rocky highway, not with talk only, but with the unending labor of the needles.

"The wool of the Shetland sheep is hair-like and—shrink not, gentle reader—is not shorn, but plucked out of its unresisting owner. This process is said to maintain the fineness of the wool and is undoubtedly connived at by Nature herself. For the wool each summer grows finest next the skin, so that the outer growth of the former year comes away in handfuls without injuring the sheep; indeed, if the wool is not 'rooded,' or plucked by hand, it is speedily torn off by the rocks and bushes and given to the winds. On the Shetland moors also may be seen the ponies running wild and free. Sir Walter Scott says they may be caught and mounted, but this is not so easy as it looks. These ponies make delightful children's horses, but what a pity to condemn them from the free, adventurous life of the moors to the dark drudgery of the coal mines.

"One would like to tell of the herring and whale fisheries, of the Dutchmen who annually visit the waters of Lerwick in their 'booms,' of the splendid seabirds of Shetland, of the fortunes of the fisherfolk and sailors, or some of the old romantic stories. But it is enough. The islands cast a spell over all who visit them, a spell woven from the enchantments of earth and sea and sky and the old heroic memories. 'Disjecta est Thule.' If you can, go and see for yourself."

A DIFFERENCE INDEED

A little girl of about five was finding keen enjoyment in twirling the knob of the candy box on the seat in front of her at the theatre.

"Don't do that, Ethel; it makes too much noise," said her mother.

Ethel paused, undecided, her hand outstretched for another twirl.

"I warn you," said her mother, very sternly.

Still Ethel hesitated. Finally she queried audibly: "With a hair brush, mamma, or just your hand?"

Septic Tank for Farm Sewage

THE importance of properly disposing of farm sewage is a subject which should receive more attention in the interests of health in our rural communities. Dr. E. M. Sautee has this to say in the New England Homestead:

"During the past three years I have advocated this method of sewage disposal before over 200 rural audiences, composed of over 2,500 people, in this and three adjoining states. Judging from the inquiries received, the article in your columns must have been read in about every civilized country of the globe; plans have been prepared and sent to over 700 people who said they wanted to install the system, and not a single case of failure or even complaint has come back. Yet rural people who are denied the privileges of a city sewer system continue to use the old-fashioned cesspool, contaminating their own or their neighbors' wells, and, in many instances, transmitting contagious disease from one member of the family to another through the cesspool and the well or the spring. Many well-authenticated cases might be cited.

"A man who had a cesspool more than the supposed required distance from his well employed another man to clean the well. This laborer pumped until he thought the well should have been emptied at least three times. When he examined it he found that the water had not been appreciably lowered. Surmising the real difficulty, he went down while someone else pumped. He found a stream running in on the side next the cesspool. He also found that the water stopped flowing in soon after the pumps stopped working. He was pumping water into the cesspool only to flow at once back into the well.

"At another place in a village there was a case of typhoid fever where a considerable quantity of permanganate of potash was emptied into the cesspool. Soon after the disinfectant was used a neighbor across the street noticed a purple

color to his well water, showing a direct connection between the well and the cesspool.

"Bad as the cesspool is, it is far preferable to the shallow vault, which is usually open for myriads of flies to carry contamination direct to the only place where they ever take a foot bath—the milk and other drinkables in the surrounding homes.

"Criticisms have come indirectly from engineers all relating to the disposal of the effluent. One of the best known in the state advocates the installation of 100 feet of four-inch tile for each person in the family; another 40 feet; another is said to have insisted upon a siphon line to flush out the tile in the disposal area. Well, the proof of the pudding is not in seeing the other fellow eat it or hearing him talk about it. One of our best engineers told me that four feet a person would be adequate in gravelly soil, and his first tank was thus equipped with perfect satisfaction.

"Wishing to settle this point, as well as some others, from the standpoint of experience rather than theory, 25 names were picked from the list of those having made inquiries about the septic tank, and letters were written asking for experience, cost, etc. These names were selected with the view to covering as wide a range of territory and as many different conditions as possible. Nearly all the people have replied. A few had not yet installed the system, but 19 had followed directions contained in the New England Homestead article. Three had disposed of the effluent by emptying into a stream or tile drain. Just one had had trouble with the effluent. Dr. Bernstein, superintendent Rome custodial asylum, wrote:

"We have three of these in operation at the present time, two on farm colonies, each farm colony accommodating 20 inmates, a farmer and his wife, and the third one accommodating the engineer's cottage, a detached building, from our general plant. The two at the farm

colonies work very nicely. The one at the engineer's cottage has not been working so well, for the reason that we have to drain into low, swampy land; therefore, water frequently appears at the surface.

"The one at the Brush farm drains through gravelly soil and has been in operation now three years, and we have never opened it. The one at the Bailey farm drains through wet, low soil, and thus we found it necessary to dig several trenches 4 feet wide about 3 feet deep and about 40 feet long, filling with gravel, and then covering with a muck ground which we had shovelled out. This plant has been in operation now two years under these conditions with no trouble of any kind, and no water appearing on the surface. These tanks have never frozen. I built these entirely by your sketch."

"M. P. Howes, cashier of the First National Bank in Frederickstown, O., writes: 'I have been using mine now for nearly two years, and I do not see that it is not working as well as at first. I built it as nearly as possible like the one you described in American Agriculturist. The cost did not exceed \$10. It has never frozen. There is only one near me built as mine is, except that it has a partition, but I did not see the need of a partition. I am more than pleased with it, such a blessing it is. I cannot think of a single suggestion for improvement.'

"The following from J. R. Nesbit, of Fergusonville, throws some new light upon a phase of the subject, and will be of interest: 'Two years ago this spring (after hearing you explain the subject at a farmers' institute in Davenport) I put in a septic tank 6 feet long, 3 feet deep and 3 feet wide; 4 inches inlet and 3 inches outlet. The tile for the outlet is about 60 feet long.

"It has always worked perfectly. No trouble with it in any way since we have used it. No odor, and it has never frozen. I remember reading your answer to someone who asked if it would work if the bath was not emptied into it. You said you had never known it to be used without the bath, so I mention this, as we do not have a bathroom. We have two small children, and quite often fecal matter is thrown into the outer drain connected with the septic tank, and that

may have had some effect. There are, on an average, six persons in our family.'

"Here is a man who has had perfect results for two years, with only 60 feet of three-inch tile in his disposal area. What he says about working well without much fecal matter is also interesting to milk station and creamery men.

"Since beginning this article four more reports have come in, three of them in response to the editorial request in New England Homestead. All tell the same story of perfect satisfaction.

"From this array of evidence from the actual builders and users, varying from two to four years, it seems perfectly fair to arrive at the following conclusions:

"1. The septic tank furnishes the best solution of the farm sewage problem.

"2. It is effective, satisfactory, economical.

"3. It does not freeze when in use in the coldest climate.

"4. It needs no cleaning or attention of any kind. When properly installed it may be covered up and forgotten.

"5. The tank may be located anywhere outside the cellar wall.

"6. The vegetable garden is the ideal location for the disposal area; any loose soil will do.

"7. The tank should be 2 feet wide, 3 feet deep and 1 foot long for each person in the family, but not less than 6 feet long for the smallest family.

"8. The disposal area should contain from 4 feet to 10 feet for each person in the family, the amount depending upon the looseness of the soil. This tile should be laid in a ditch 12 inches deep and have very little fall.

"9. The inlet pipe should discharge within 18 inches of the bottom pipe directed downward.

"10. The outlet pipe should be as near the top as possible with an elbow directed downward 1 foot, so that the effluent will leave the tank a foot below the green scum that forms upon the top of the liquid.

"11. The cost of installation will vary from \$10 to about \$25, depending upon the labor cost. The material will cost from \$2.50 to \$4."

In a report recently issued by the Cali-

fornia State Board of Health, the following interesting information on this subject is given:

"Incorporated towns and cities are in a position to secure the advice and services of trained engineers to design their sewage disposal works, but the inhabitants of isolated residences, farmhouses and villages cannot always avail themselves of such technical knowledge, hence it is proper that some words of advice should be offered.

"Sewage is the waste matter resulting from man's direction of the forces of nature for his benefit, and includes not only the natural human excreta, but also the wastes from the kitchen, laundry, dairy and perhaps the stable and pigsty (or at least these latter should be included in the consideration of sanitary conditions). Practically all of these wastes are organic matter which must eventually be returned to the simple elements through the processes of decomposition and putrefaction.

"These decomposing processes are effected by the action of minute organisms, known as bacteria. The bacteria which we find so active in breaking down the organic matter in sewage are of two kinds, 'aerobic' and 'anaerobic.' The aerobic, as indicated by the name, thrive and perform their functions in the presence of air and light. They are the cause of the putrefaction of dead animal matter as we see it in the open air, the decomposition of which causes such offensive odors. The anaerobic bacteria (designating organisms that live in the absence of oxygen) work in the dark and away from free air, breaking up the particles of organic matter and dissolving them into their original elements.

"It has been found that where sewage is collected in a tank where proper conditions obtain, after a few hours the anaerobic bacteria have attacked the solid matter and separated the constituents. The inorganic matter falls to the bottom, while most of the organic matter is dissolved into fluid and gaseous forms. That which has not been dissolved is broken up into fine particles and held in suspension in the liquid. A 'scum' forms on the surface of the liquid in the tank which soon becomes dense enough to

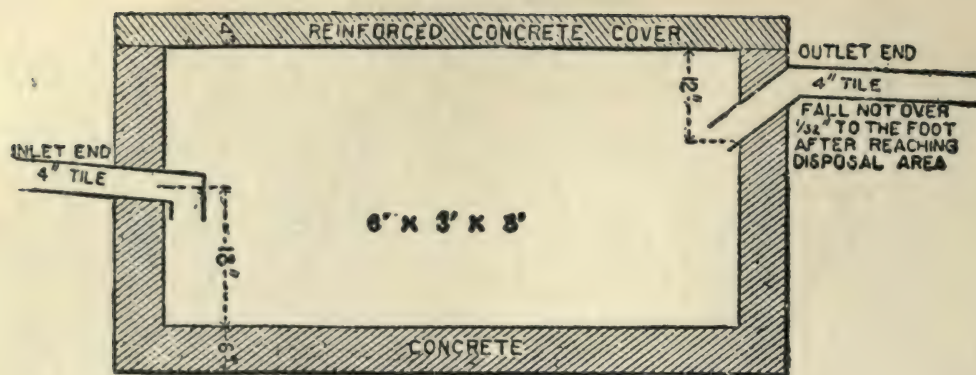
shut out light and free air. As these conditions become established the anaerobic bacteria acquire their greatest activity. The period required for maximum effect varies with the quality of the sewage, temperature and other conditions, and ranges from, say, 6 to 24 hours, but 8 to 16 hours is the usual time for ordinary house refuse.

"Any person may obtain a quotation in his own community on the materials listed below. To this estimate he has only to add the cost of labor.

"For Concrete Tank—One barrel cement, 52 lbs. hydrate of lime, 57-100th cubic yard of sand, 86-100th cubic yard broken stone, one 1x12in.x18ft. lumber, one piece 1x8in.x10ft. lumber, two pieces 1x12in.x10ft. lumber, two pieces 1x12in.x14ft. lumber, two lengths 2in.x2ft. 6in. wrought-iron pipe, one 4 in. elbow, one 1x6in. brass nipple, one 1in. elbow, one length 1in.x3ft. 3in. galvanized iron pipe, one 1x3in. galvanized iron nipple, one 3x3x $\frac{3}{8}$ in. floor flange ($\frac{3}{4}$ in. threaded hole), eight feet $\frac{3}{4}$ in. vent pipe, one galvanized iron weir. Form lumber: Four pieces 2x4in.x4ft., four pieces 2x4in.x4ft. 4in., 16 pieces 1x12in.x4ft., eight pieces 1x12in.x4ft. 8in., eight pieces 1x12in.x5ft., two pieces 1x4in.x4ft. 8in., two pieces 1x4in.x5ft., two pounds 10d nails.

"For Wooden Tank Box—Four pieces 2x4in.x4ft. plank, 22 pieces 1x12in.x4ft. 4in. plank, 14 pieces 1x12in.x4ft. plank, two pieces 1x6in.x4ft. plank, two pieces 1x8in.x4ft. 4in. plank, two pieces 1x6in.x4ft. 4in. plank, two pieces 1x8in.x4ft. plank. Inside walls and top: One piece 1x12in.x18ft., one piece 1x8in.x10ft., two pieces 1x12in.x10ft., two pieces 1x12in.x14ft.

"The action, called 'septic,' does not completely dissolve the matters contained in the sewage, but under proper conditions should destroy 40 to 60 per cent. of the organic matter, leaving the remainder suspended in a fine divided state. The effluent from the tank will, therefore, be putrescible, and if exposed to the air in stagnant bodies will soon become offensive. To avoid the offensiveness the effluent is disposed of by turning it into streams of running water, which is a dangerous practice, or by using it for



CROSS-SECTION OF SEPTIC TANK

irrigation, either on the surface or in sub-surface tiles (sub-irrigation is not successful, however, unless the soil is of a sandy nature), or by further treatment. This further treatment consists in spraying the liquid effluent from the tank out through the air over 'contact-beds' prepared of rough rocks and coarse gravel. The purpose of this process is to get the effluent aerated and in contact with the 'aerobic' bacteria.

"When properly constructed none of these methods needs require much expense. The tank estimated for an ordinary farmhouse with a family of from five to eight should accommodate the wastes from the toilet, bathroom, kitchen and laundry tubs.

"The sewage flows from the house into the septic tank through the 'inlet pipe,' and is held there by the 'outlet weir' for 10 or 12 hours. During this time the solid bowel discharges and other organic materials in the sewage are worked over by the 'anaerobic' bacteria. The heavy inorganic 'sludge' settles to the bottom of the tank and the lighter separated portion rises to the top to form the leathery 'mat.' If the tank works well, however, these two constituents are very small in bulk, most of the solids having been broken up into gases, materials which dissolve in water, and very finely divided particles, which remain suspended in the water and pass out with the effluent.

"The 'soil pipe' from the house should be 4 in. vitrified clay, bell and spigot-jointed pipe. The cementing of these joints is specially important in the vicinity

of trees and rose bushes, as their roots will utilize every opportunity to wedge into the joints. The outlet weir is a simple device so arranged as to permit a constant discharge regardless of the intermittent inflow of the sewage from the house. If subsoil irrigation is planned, the effluent should be carried in loose-jointed 2 in. tiles placed 12 to 18 in. below the surface and having a fall of from 2½ in. to 3 in. to 100 ft. In sandy soil the distributing pipes should total approximately 200 ft.; in less absorbent soil the amount of distributing pipes must, of course, be increased.

"The tank does not require a roof, though one may be provided as a matter of safety or appearance. Successful tanks have often been operated for six or eight years without being opened, though the majority of them accumulate enough heavy sludge in three or four years to make it desirable to clean them out. The sludge so removed may be readily disposed of by spading it into adjacent ground. The Kansas Board of Health in a similar discussion of the subject, previously referred to, states: 'Particularly for those parts of the state where the rainfall is so small that the water of the sewage, as well as its fertilizing constituents, has an appreciable value, the disposal scheme outlined above may have a considerable economic as well as sanitary value. It is quite possible by this method to maintain in the driest region a large, well-fertilized and well-watered lawn. The process should be carried on entirely without

odor, though, of course, the septic tank should be located some little distance from the house—say 100 ft. or more, if possible. Particularly the disposal plant should not be near to any open well which is used as a source of water supply.'

"The expense of this suggested plant will vary. Anyone can obtain prices, however, on the materials given in the diagram, and can accurately estimate the cost in his locality. In many parts of the state this cost would not exceed \$25 to \$30."

We cannot too strongly urge those living in rural districts to give the foregoing information their careful consideration with a view to improving life on the farm.

MARY'S CLOTHES

Mary had a little lamb—

'Twas Persian—on her coat;

She also had a mink or two

About her dainty throat;

A bird of paradise, a tern,

And ermine made the hat

That perched at jaunty angle

On her coiffure, largely rat;

Her tiny boots were sable topped,

Her gloves were muskrat, too;

Her muff had heads and tails of half

The "critters" in the zoo;

And when she walked abroad I ween

She feared no wintry wind;

At keeping warm 'twas plain to see

She had all nature "skinned."

IMPERIAL EMIGRATION

CONTINUATION of prosperity, of the sort that has characterized the West of late, is largely dependent upon immigration into the four provinces. It is now well understood that 1910 was the greatest year in the history of the Dominion in this respect, totalling about 350,000 in all. About 120,000 immigrants came from the United Kingdom during the past year, about 125,000 from the United States and the balance from the continent of Europe. Twenty-four thousand persons from the United Kingdom left various

ports for Canada in May, an increase of six thousand over May a year ago.

At last month's Imperial Conference the Australian Prime Minister formally moved the reaffirmation of the resolution of the last Conference in favor of the encouragement of British emigrants to proceed to British colonies. Sir Joseph Ward said that in New Zealand they were not in favor of a wholesale system of emigration, but they wished as far as possible to have people from the United Kingdom.

Mr. John Burns, who addressed the delegates, said that if the rate of increase for the first four months were continued for the whole of 1911, the total emigrants from Great Britain to all countries would amount to 300,000, of whom it was estimated 230,000, or nearly 80 per cent., would go to different parts of the Empire. With a diminishing birth-rate the Mother-country could not safely go beyond 300,000 a year, and if 80 per cent. of these went to different parts of the Empire, the Conference would probably agree that that was as much as they could reasonably require. "The Dominions are entitled to have the surplus, but they must not diminish the seed plot. Emigrant ships are no compensation for empty cradles in any part of the Empire," said the president of the Board of Trade.

It was unanimously agreed that the present policy of encouraging British emigrants to proceed to British dominions rather than foreign countries be continued, and that full co-operation be accorded to any dominions desiring emigrants.—Canadian Finance.

CERTAINLY

In a recent examination paper for a boy clerk's post was this question:

"If the Premier and all the members of the Cabinet should die, who would officiate?"

Robert, a boy of 14, thought for a time, trying in vain to recall who came next in succession. At last a happy inspiration came to him and he answered:

"The undertaker."

Bob White

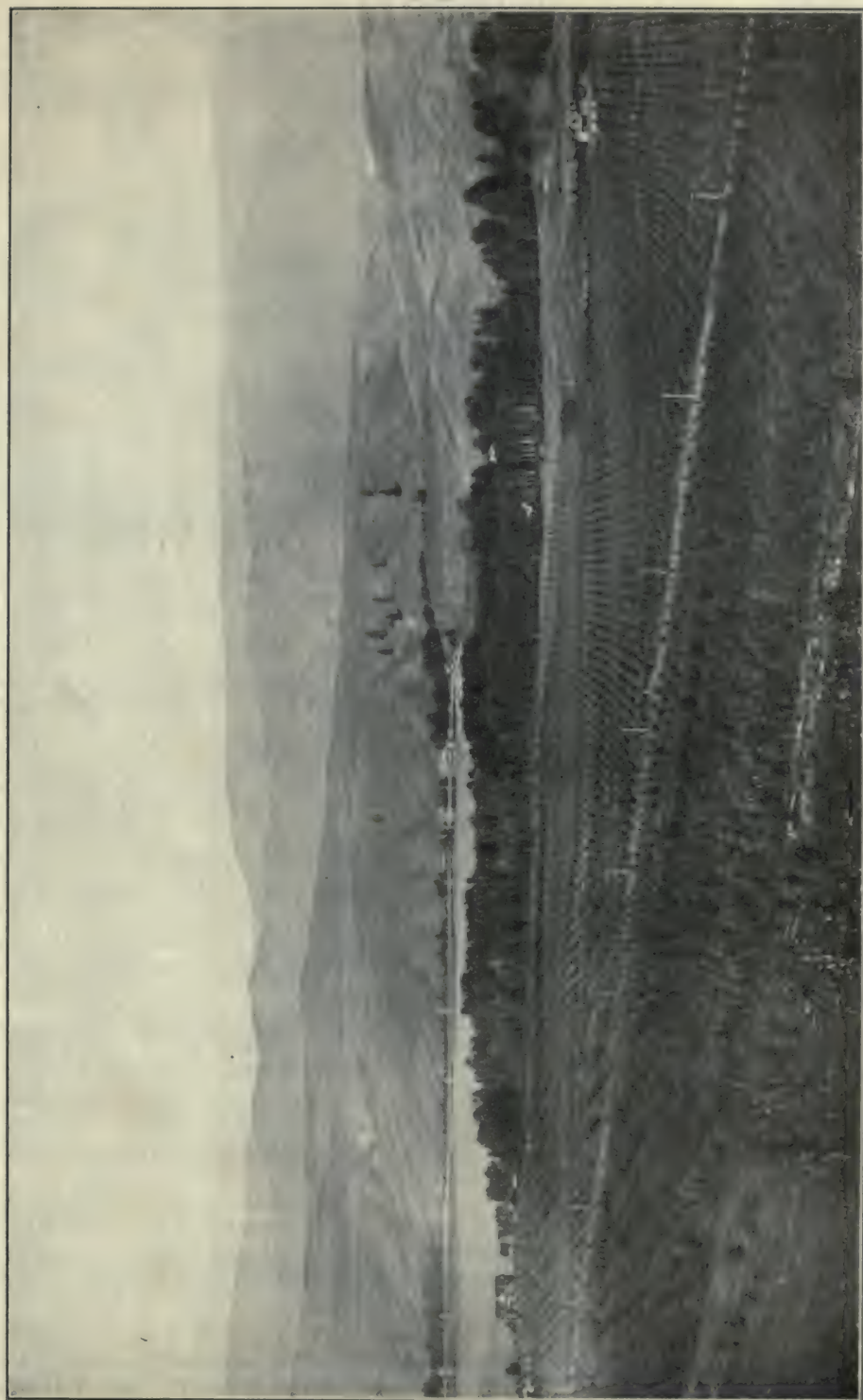
A RECENT writer in the "Youth's Companion" tells of some actual meals made by these active and hearty little birds, and the figures are surprising. In a single day one quail has eaten 12,500 plantain seeds. Other records are 12,000 pigweed seeds or 15,000 of lamb's quarter in a day, and 1,000 of crabgrass at a meal. When it comes to insects his appetite is equally good. One quail ate 5,000 plant lice in a day. At another time the same bird devoured 568 mosquitoes in three hours and then quit only because the supply gave out. They eat all sorts of injurious insects, too, potato beetles, cutworms, Hessian flies, boll weevils, chinch bugs, codling moths, grasshoppers—just anything that comes handy, it seems. It is hard even to conceive of the vast number of injurious insects a covey of quail will consume in the course of a year. The destruction of every one of these insects, too, is a positive benefit to the farmer; and for this reason alone, one should always hesitate before killing a quail, or indeed a bird of any kind, unless positively known to be injurious. Scientists tell us, and they are doubtless right about it, that if it were not for the birds it would be a matter of only a few years until the insects and creeping things would have the upper hand of us. The crops would disappear from our fields, and men everywhere would be in danger of starvation simply because they would be unable to combat the countless multitudes of insects which would devour and destroy the plans upon which men depend for food.

Every boy, therefore, who wantonly kills a bird or injures a nest, not only does a cruel and unmanly thing, but also makes it harder for the farmer to raise his crops to maturity. The protection of a quail's nest or of a brood of young ones should be considered a matter of course. There is some excuse for shoot-

ing Bob White after he grows up and is able to a large extent to take care of himself, but there can be absolutely none for the killing of any song bird not good for food, or for the breaking up of any bird's nest.

Let us protect the quail, then. If we find a nest, leave it sacredly alone, discourage as far as possible the roaming of worthless dogs over the fields; regulate hunting and insist that never shall a covey of quail be completely killed out. The man who will do this is no sportsman, anyway, but is a mere butcher. The true sportsman is going to be satisfied with a reasonable "kill." Proper protection of our game birds will be of benefit to both hunter and farmer; but if it becomes a question as to whether the farmer or hunter is to prevail, the farmer's right must always prevail over the hunter's wishes. No man should be allowed to shoot on another's land without permission, and always the hunter should be under strict supervision.

And while protecting our good friend Bob, let us remember that the other birds deserve the same friendship and care. The crow is a nuisance often; sometimes it is well to use a shot gun on a flock of blackbirds; the English sparrow does harm by driving more useful birds away; it may occasionally be necessary to make an orchard or garden unpleasant for the robins or catbirds; in some sections the rice birds become too numerous; two or three hawks and one or two species of owls are injurious. But aside from these it is safe to protect by any means in our power all the birds with which we meet. It is only because we have not appreciated their value that we have not done all in our power to insure their safety and happiness; and certainly the man or boy who would needlessly injure one of these little creatures is lacking in some finer qualities of real manhood.



FRUIT FARMS AT LONG LAKE, NEAR VERNON, B. C.

Editorial

ADVERTISING THE COUNTRY

OUR Ottawa Letter is always interesting, but we would direct special attention to the communication in this number from our representative at the National Capital, with particular reference to charges that are from time to time made to the effect that the values of fruit lands are grossly and habitually exaggerated.

Intending immigrants and investors from abroad should consider seriously our correspondent's advice in this connection.

* * *

IMPORTANT APPOINTMENT

INTIMATION has been received from Ottawa of the appointment, on the recommendation of the Minister of Agriculture, of a commission, headed by Mr. J. A. Ruddick—dairy and cold storage commissioner—to conduct a thorough and comprehensive inquiry into conditions affecting the fruit-growing industry of Canada and the status of that industry generally. The commission calls for a report under the following heads:

"Area and extent of land adapted to fruit-growing in the various provinces."

"Variety of fruits which have been found to be the most profitable and successful in several provinces or subdivisions of same."

"General trend of industry toward concentrating production of large quantities of standard varieties."

"Difficulties which are likely to be encountered."

"Methods of production."

"Facilities for distribution and marketing."

"Possibilities of overproduction."

Doubtless Mr. Ruddick will perform this much needed work in a highly satisfactory manner, and possibly in time to lay the information before the forthcoming Dominion Fruit Conference at Ottawa in December next.

Reliable information along the lines indicated is of prime necessity.

* * *

PEDIGREED STOCK

IN the "good old days," when we used to speak of giving a boy an education, it was taken for granted that he contemplated entering upon some commercial, business or professional career. The idea of educating a boy for the pursuit of agriculture was seldom thought of; but in more recent years agriculture, and particularly the fruit-growing branch, has been raised from simply an occupation to a science, and a first-class education is now absolutely essential to success. Likewise "pedigreed stock" was formerly a term applied only to animals which had been produced by careful and systematic breeding. But the same law of "like producing like" is found to exist in the vegetable kingdom, and the production of a strong, vigorous, productive fruit tree is as much the result of careful breeding as the development of a high-class milk cow, a draft horse or a good-laying hen. It is therefore a matter for congratulation that the American Fruit Register Association is doing an international service to the fruit industry in evolving a system whereby the purchasers of nursery stock may have some definite guarantee of the line of descent and stock from which their trees have been produced.

Much may also be done to educate the fruit farmer how to recognize different trees before he has been to the expense of bringing them into bearing, only to find that an unscrupulous nurseryman has not delivered the varieties which he purchased.

For instance, a tree with light wood and a dull serration around the leaf may be a Spitzenberg, but the same style of leaf on dark wood is likely to be a common Winesap.

A sharply serrated leaf when found on light wood, similar in every way to a Spitzenberg, is most likely a Jonathan,



CENTRAL GROUP OF THE PARLIAMENT BUILDINGS, OTTAWA, ONT.

and on dark wood a Stayman Winesap, which wood is exactly the same as a common Winesap, but the latter has the dull serrated leaf. Thus these four popular varieties may be distinguished, although there are other and different marks of distinction on all fruit trees grown. While we do not intend to endeavor in this article to teach reading re bearing trees, we wish to show that it is not an impossible task, and that it is a most vital point to the orchard builder. Every man who sets out a commercial orchard should know that his trees are what he ordered. The nurseryman and the orchardist should co-operate and unite in an effort to secure better tree stock, better labelling, and better fruit.

Leonard Coates, of Morgan Hill, California, read a paper before the Pacific Coast Nurserymen's Convention held at San Jose, California, in June, on the subject of "Pedigreed Stock—Does it Pay?" Mr. Coates has done a great deal in keeping record of the performance of trees. He says "pedigreed" is not a correct name for this class of stock, but that "we all know what it means"; that he has tested out the work and finds that you get superior stock by going to the

trees that do superior work for your scions and buds. He calls attention to Dr. Galloway's work on the observation of the performance of citrus trees under the direction of the federal government. He says it does pay, even for the nurserymen, but that the big pay is to the orchardist who secures this class of stock. Mr. Coates hits the man (sometimes he is the editor of a fruit publication) who says "pedigree" fruit is simply a slogan by the nurserymen for advertising purposes.

Mr. H. M. Lichty, of Sunnyside, Wash., secretary of the American Fruit Register Association, said, in part, that he was an advocate of association, organization and co-operation. Continuing, Mr. Lichty said: "In the beginning of this work I was referred by W. P. Stark, then president of the National Association of Nurserymen, and by W. S. Thornber, Washington State Horticulturist, to the Kelloggs of Three Rivers, Michigan.

"Over twenty years ago nurserymen laughed at the idea of 'pedigreed' strawberries. But the Kellogg's laugh comes last. These men write to me as follows: 'We are confident that if the association carries forward its work upon the lines

laid down, which, so far as the practical work is concerned, is identical with that which has gone forward on our strawberry farms for more than a quarter of a century, there can be no doubt of its high value to the fruit-growing world and to the fruit-consuming world as well.

"I hold in my hands letters from Professor John Craig, Cornell; J. K. Shaw, Amherst, Mass.; Leon D. Batchelor, Logan, Utah; O. B. Whipple, Boseman, Montana; H. E. Van Deman, Washington, D. C.; and W. M. Hayes, assistant secretary to James Wilson, every last one favoring my idea. What's the use to quibble longer or split hairs as to whether it be 'pedigreed trees' or 'registered trees'; whether the round Delicious of Colorado be the same Delicious as that delicious long fellow with his five horns of Washington, or whether they are simply cousins in the same family. Why quarrel as to whether you call it 'breeding up' fruit or 'fruit selection.' We all agree on the importance of doing the work. Why wait for the federal government, with its slow grind and red tape, or the colleges with their lack of money appropriations, to do this work when men and capital stand ready to do it?"

"We have on the governing board of the American Fruit Register Association men who are organizers and leaders, who have 'delivered the goods' in other lines and promise to do the same in this.

"On our committee on council are Professor C. I. Lewis, of Corvallis, Oregon, and Mr. Tonneson, the secretary of this association. On our scoring board are J. A. Balmer, ex-state horticulturist, and Professor W. H. Wicks, of this position in Idaho, and before leaving California we hope to add one more name to each of these two important committees from this state; and behind this array of talent and strength of integrity there is the money necessary to carry forward the work. I cannot even here outline to you the method by which the work is to be done; but to those of you who are interested I shall be pleased to mail the prospectus of the American Fruit Registering Association, and other literature that will explain our plan.

"It is easy to see why the orchardists are taking so little interest in this. They have their orchards. Little can be done to improve these by better stock. There has been such a great and growing call for trees that nurserymen have had to resort to almost any kind of methods to supply the demand of any kind of nursery stock, and for this reason—no market is yet created for superior propagating stock in fruit as there is in corn, wheat, potatoes and other lines.

"It is a shame, but nevertheless true, that scions and buds used in the propagation of nursery stock are largely gathered by incompetent help, who are known to have been sent out to pick up the prunings in the orchards to be bunched up and sold at so much per thousand. And these very orchardists who are kicking the nurserymen for poor labelling have been guilty of this very provocation. This cannot occur under the system of the American Fruit Register Association."

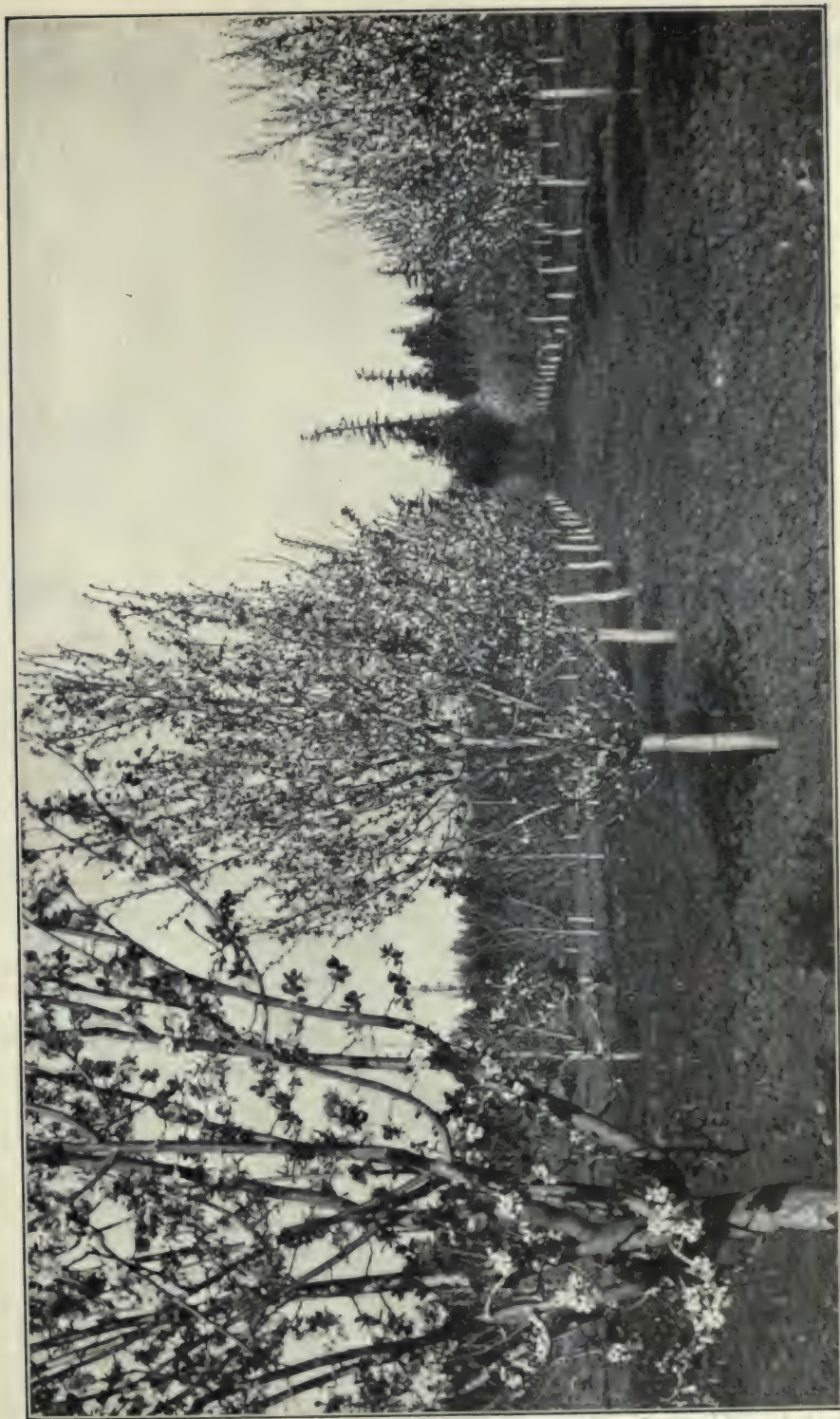
* * *

ANNEXATION

THE discussion of the proposed reciprocity agreement between Canada and the United States has produced some strange and most startling results, which may be worthy of attention. For a legitimate trade question, which never should have been dragged into the sphere of party politics; it would seem to be very humiliating to have our national dignity and self-respect outraged by the vapid mouthings of political partisans in the discussion of the subject.

In the March number of *The Fruit Magazine* we endeavored to impartially present some important facts bearing directly upon the subject of reciprocity, and dismissed with scant courtesy the presumptuous assertions of such men as Mr. Champ Clark and Representative Bennett, of Washington.

But we have still more contempt for the Canadian politician, or unsophisticated weakling, who for want of legitimate arguments insults the intelligence of the great mass of patriotic Canadians by admitting the possibility of annexation to the United States, or any



PRINCESS PEARS IN THOMAS A. BRYDON'S ORCHARD, VICTORIA, B. C.

other country, being seriously considered for one moment. A home, self-consuming market has its limitations, and the expansion of trade can have no terrors for a progressive people, particularly when the power to change it remains in their own hands. Whether the proposed reciprocity agreement with the United States goes into effect or not, the Canadian ship of state shall ride proudly on over the sea of international trade and commerce to her natural destiny, viz., an honored place among the important nations of the world.

Our attention has been attracted by an editorial in the Westminster Hall Magazine for June on "The Annexation Cry," the closing sentence of which is a distinct shock to our preconceived ideas of the high quality of the grey matter from which the editorials of such a publication should be evolved. The editorial referred to concludes as follows: "The time will soon come when to refuse our farmers reciprocity would be the first step towards annexation. They are determined to have access to this ninety million market which is at their doors. The closer communication and the resulting prosperity would only enhance Canadian national feeling, as reference to our former reciprocal trade relations with the United States shows. There would be no loss of loyalty to Great Britain, but rather a gain. If Canadian farmers are not given an entrance to this market through a reciprocity agreement, they will have no other alternative than to demand it through annexation."

For an example of downright ignorance of the past history of the Canadian people, the development and present status of the Canadian nation, the prevailing optimistic, self-reliant, independent national spirit permeating the whole Confederation from the Atlantic to the Pacific, the last sentence of the above quotation takes the palm.

One would naturally conclude that the writer was some recent arrival from the United States or Great Britain, whose education in things Canadian had been sadly neglected and who had not yet had the scion of true Canadianism properly engrafted into his soul. While we do not for one moment credit the United

States, as a nation, with ulterior designs upon Canada's national existence, if we were to admit such a possibility just for the sake of argument, conquest is the only possible means whereby it could be accomplished; and when it comes to the defence of home and country against an unjust aggression, the spirit which animates the defenders counts for a great deal more than the numbers in the invaders' camp, to say nothing of the moral support of modern civilized countries. We might note a number of instances in our past history, but for the present we shall be content with citing the Battle of Chateauguay in 1813, and leave the insignificant company of annexation ranters to commune with their own craven spirits, while we turn our attention to the business of the country that is really worth while. By way of variation, we will allow Mr. T. G. Marquis to tell the story of the Battle of Chateauguay as follows:

"United States historians have little to say about the Battle of Chateauguay. They take no pride in the work of their generals and troops on that memorable occasion, and either completely ignore the event or minimise its importance. It is true, the loss of life was insignificant; but so far as Canada was concerned it was a battle of the greatest importance. From such a careful historical investigator as Henry Adams fairness might have been expected, but even he has misstated the number of men invading Canada under General Hampton, and goes so far as to praise that soldier for beating a retreat to the United States without losing his entire army. The archives of both Canada and the United States were open to him, and his account of the action looks decidedly dishonest. He dismissed the affair with a brief paragraph, and to play to the gods in his own country concludes as follows:

"The British generals at Montreal,' he writes in his 'History of the United States,' 'showed little energy in thus allowing Hampton to escape, and the timidity of their attitude towards Hampton's little army was the best proof of the incompetence alleged against Prevost by many of his contemporaries.'

"Sir George Prevost, on the other



CHERRIES FROM THE W. H. COVERT ESTATE, GRAND FORKS, B. C.

hand, in his official report of the engagement, is very misleading. On many occasions he proved himself irresolute and incompetent; in his account of the Battle of Chateauguay, as in his report dealing with Macdonell's capture of Ogdensburg, he is guilty of misrepresentation. The battle had been fought and won before he reached the field of conflict, and yet a perusal of his account would leave the

student with the impression that it was successfully terminated through his courage and military skill. He took much of the glory of the action to himself, and gave the rest to Major-General de Watteville, who was five miles distant from the actual fighting, and took no part in it. The silence and the misrepresentation of the United States historians and the misrepresentation of the

British Commander-in-Chief make Chateauguay a difficult engagement to describe fully and correctly.

"The war, which was to have been a mere matter of marching on the part of the United States troops, had now dragged on for more than a year. Reverses had taught the War Department at Washington many excellent lessons. To conquer Canada large armies were essential, and these were now in the field. Montreal was the heart of British North America then, as it is today, and it was planned to bring the struggle to a speedy end by capturing that city. If Montreal were once captured the western peninsula would be forced to surrender, and the whole of Canada, save the city of Quebec and the Maritime Provinces, which were protected by Britain's 'wooden walls,' would speedily be conquered. General Wilkinson was ordered to descend the St. Lawrence to Lake St. Louis, where he was to form a junction with General Hampton, who was to march overland to the same body of water. When the two armies were united they were to advance with all possible speed against Montreal.

"Hampton marched from Plattsburg and entered Canada on September 20, 1813, having under his command more than five thousand men. His northward march was far from being a pleasure excursion. Lieutenant-Colonel de Salaberry had long been expecting such a movement, and immediately after the outbreak of hostilities had rendered the roads over which the enemy's troops would have to journey impracticable by obstructions of various kinds. The main road, too, was patrolled by a watchful band of sharpshooters, whose duty it was to harass the enemy as they advanced. Hampton was confronted by the obstructions and attacked by the sharpshooters as soon as he entered Canadian territory. He immediately retraced his steps, and took the road leading westward from Plattsburg, and by a roundabout way continued his march to the Chateauguay River. It was not until October 21 that he was in a position to invade Canada near Chateauguay. Under his command were five thousand five hundred and twenty infantry, one

hundred and eighty cavalry and ten field guns. At Chateauguay Lieutenant-Colonel de Salaberry was awaiting him with a meagre three hundred men.

"On October 22 the United States army rested at Spears, near the junction of the Outard River with the Chateauguay. Here Hampton waited until his guns were brought up. As soon as they arrived he made his final preparations for sweeping from his path the troops that were menacing his attempt to capture Montreal by way of the St. Lawrence.

"De Salaberry had taken up his position in a deep forest seven miles from Hampton's encampment. Hampton was aware of this and sent out a party of scouts to reconnoitre. A ford was discovered across the Chateauguay on De Salaberry's left flank. Hampton believed that he could capture the entire British force. With this end in view he decided to send Colonel Purdy with a strong contingent across the Chateauguay by means of this ford, and while this force attacked the British in the rear he, with his main army, would fall on the enemy's front; retreat being effectually cut off by Purdy, there would be nothing for it but a humiliating British surrender.

"De Salaberry was in a naturally strong position. He had increased its strength by obstructions of fallen trees and abattis. However, he had little hope of winning a victory. With his mere handful of men he could only expect to retard the enemy's advance for a brief period. His force was composed of a flank company of Canadian Fencibles and four companies of Voltigeurs. He made his gallant stand some six miles and eighty rods from the English River. The spot has been marked by a monument set up by the Dominion Government, and is as worthy of recognition as Queenston Heights.

"The British commander expected to have reinforcements in the course of a day or two. To his delight, they unexpectedly arrived on the eve of the battle. Canada had received warning of Hampton's intended invasion. Lieutenant-Colonel George Macdonell was at that time in Kingston. He was thoroughly familiar with the St. Lawrence, and was chosen to lead a force of six hundred



Seated in the centre is Alex. McNeill, Chief of Fruit Division, Ottawa. Reading from left to right, the others are the Dominion Government Fruit Inspectors who attended the First Dominion Fruit-growers' Conference at Ottawa, March 20-22, 1906: F. L. Dery, G. H. Vroom, J. F. Scriver, E. H. Wartman, A. Gifford, P. J. Carey, J. J. Philp, Maxwell Smith.

men to De Salaberry's aid. He made his preparations for his march with as great speed and cleverness as he did at Fort Wellington, when about to attack Ogdensburg. In quick order he had his troops ready for their arduous journey. Down the St. Lawrence they sped, rowing, paddling and sailing through the exquisitely peaceful scenery of the Thousand Islands. When the rapids were reached they raced down them, shouting the rough music of their boat songs. They took at a rush the treacherous waters of the Long Sault; with express train speed they dashed down the Cedars, Split Rock and Cascades, and hailed with joy the calm stretch of Lake St. Louis. On the shores of the lake they disembarked, not having lost a man during their passage of the dangerous St. Lawrence. Briefly resting their bodies, stiffened by the long journey in the boats, they once more fell in at their impatient commander's orders, and hurried through the forest to Chateaugay, twenty miles

away. This hardy little troop of *voyageurs* reached De Salaberry on the day before the battle, having negotiated one hundred and ninety miles by water and land in sixty hours' actual marching—a forced march unequalled during the war.

"De Salaberry now had an army of a little over nine hundred men, including fifty Indians, under Captain Lamothe. Much was said at the outbreak of hostilities with regard to the disloyalty of the French in Canada. Even so brave a soldier, wise a general, and courteous a gentleman as Isaac Brock distrusted them. It is worthy of note that De Salaberry's force, with the exception of Lieutenant-Colonel Macdonell, Captain Ferguson, three or four others and the Indians, was entirely composed of French-Canadians—and gallantly they acquitted themselves.

"In the darkness of the night Hampton sent Purdy with over two thousand men to the ford that had been located. The water in the Chateaugay was low,

and the river could easily be crossed. Hampton had instructed Purdy to attack De Salaberry at daybreak. He also instructed General Izard, an officer with experience in both European and American wars, simultaneously to fall on the British front with a force of about three thousand men. Izard was to be in position to make his attack as soon as he heard the sound of firing by Purdy's troops. The darkness that was to conceal Purdy's advance favored the British. The United States general lost his way, and did not reach the ford until it was almost noon.

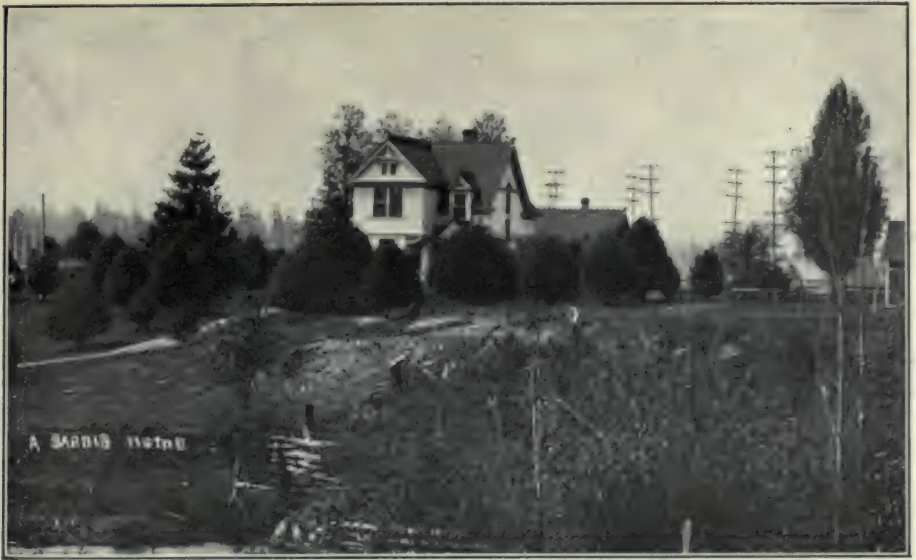
"De Salaberry had drawn up his men in a thick wood, having on his left the Chateauguay River. The ford that Purdy was seeking was guarded by a strong breastwork. At this breastwork, to prevent the United States troops taking the ford by surprise, there had been placed a picked body of Beauharnais militia. These men had neither experience in war nor even uniforms, but they were excellent shots, and from ambush could be trusted to give a good account of themselves.

"After waiting for several hours for the sound of firing in his front, General Izard became impatient and advanced to the attack. When his overwhelmingly large force neared the breastwork, the British militia fired a few shots and then retreated. The United States soldiers cheered exultingly, believing that they had already won victory, and advanced against De Salaberry's main position. The sharp fire and the large army spread terror among the inexperienced Voltigeurs, and they, too, turned their backs on the enemy. But De Salaberry stood his ground, and, it is said, held his bugler in a firm grip. He compelled the trembling musician to sound the advance. The notes came as a cry of defiance to Izard's men, who were shouting vociferously at the easy beating they had given the Voltigeurs. Lieutenant-Colonel Macdonell realized the meaning of the advance. He, too, had it sounded, and sent forward two companies to his commander's support. To deceive the enemy he sent out a number of buglers to sound the advance over a wide front. The United States soldiers had not learned of

Macdonell's arrival, and had imagined that De Salaberry's three hundred were all they would have to contend with at this point. They were astounded at the numerous bugle calls that denoted a large army. The fifty Indians, under Lamothe, by their blood-curdling cries, added to their alarm. A considerable force, with a multitude of Indians, had evidently come to De Salaberry's aid—so they thought! The Indians were ever a source of dread to the United States soldiers, and Izard paused in his advance to reconnoitre and await news of Purdy and his men.

"The Voltigeurs had meanwhile taken heart and returned to their position. Macdonell's six hundred continued their warlike clamor, and the United States troops, losing heart and fearing to lose their scalps, fled from the field. They were followed by an effective musketry fire from the companies under Captains Jean Baptiste du Chesney and Juchereau du Chesney. Hampton had unbounded confidence in Izard, but his mainstay had thus hopelessly failed him.

"Purdy had worn out his troops seeking the ford, and was late in arriving at the scene of conflict. As he advanced he was attacked by Captain Bruye, with some sixty Chateauguay Chasseurs. These he easily drove before him. Meanwhile, Macdonell had sent a company under Captain Daly across the river to check Purdy's advance. As the United States troops came into view this light company poured a well-aimed volley into them at close range. The British fire was answered by a terrific fusilade, but in firing Daly's men had taken a kneeling position, and for the most part the bullets of the enemy whistled over their heads. No men were killed, but Daly and several of his command were wounded. In the thick forest on the left bank of the river a company of Voltigeurs, under Captain Juchereau du Chesney, lay in ambush. At the opportune moment they opened fire on the advancing foe. This fire was from a totally unexpected quarter, and caused a panic in the enemy's ranks. At the same moment Purdy's men heard the numerous bugle calls pealing out the advance. They heard, too, with dismay,



HOME OF MR. A. C. WELLS, A RESPECTED PIONEER OF CHILLIWACK, B. C.

the wild war whoops of the Indians. A panic seized them, and they fled from the field of battle in terror.

"Some of Purdy's men swam the Chateauguay, and, reaching Hampton's headquarters, gave the general such an exaggerated account of the number of foes they had seen and heard, that Hampton was convinced that a powerful British force had been brought against him. He became as greatly alarmed as Izard and Purdy, and immediately ordered a general retreat. Another humiliating defeat was thus experienced by the United States; a force of nearly six thousand men, with generals of high repute, well-trained infantry, cavalry and artillery, ignominiously fled before a force of nine hundred men, who were without either calvary or guns. For the most part, too, the British troops were native-born Canadians who had had no experience in warfare, and had hastily left their farms to aid in saving their country and protecting their humble homes.

"There was little order in the enemy's retreat. The soldiers were in such a panic that, in one instance at least, friends were mistaken for foes, and across the narrow river two of the terrified companies poured destructive volleys into each other. Some of the soldiers lost their way in the thick forest, and wandering in a circle, found them-

selves, at dawn of September 27, in the British lines. In this way twenty of Izard's men became prisoners of war.

"In this fight the British loss was small. Five of the rank and file were killed and two captains, one sergeant and thirteen rank and file wounded. The enemy's loss is not easy to estimate. If we are to believe their historians, it did not exceed fifty; but the British found, on the right bank of the river where Purdy had been engaged, more than ninety bodies and new-made graves. The enemy's loss in killed and wounded was undoubtedly over one hundred. Along the line of retreat knapsacks, muskets and provisions were found in great quantities. For two days De Salaberry's men boldly followed the fleeing army. On September 28 Captain Lamothé, with his Indians, fell on Hampton's rearguard, causing a loss of one killed and seven wounded. No attempt had been made to rally the fleeing army, and this last attack lent wings to the soldiers' feet.

"De Salaberry had won a glorious victory, but at great cost to himself. For several weeks before the fight he had been watching Hampton's movements night and day. From the time he first received news of the large force which was invading Canada, he had taken but little rest. The hope of successfully checking the enemy's advance

had buoyed him up, but when the battle was over he collapsed from exhaustion and had to retire from the campaign. But he had done gloriously; with Macdonell's help he had saved Montreal from a siege and had won for himself a high and enviable place among the heroes of Canada."

"FORGET THE MAINE"

(From the "Portland Oregonian")

IT is now full time to cease to "remember the Maine" in the vengeful sense that culminated in our late war with Spain. General W. H. Bixby, Chief of Engineers, United States Army, who has had personal supervision of raising the battleship from the muck and slime of Havana harbor, states that the wreck of the vessel was caused by the explosion of her three magazines. In other words, the explosion, as disclosed by the exploration of the wreck, could not have resulted from a force from without.

But for the intervention of the years which has dulled the memory of the feeling aroused by the sinking of this battleship in Havana harbor we, as a nation, might read the report of General Bixby with shamefacedness. It may be said, however, that the United States Government took no part in the contention that the Maine was destroyed by emissaries of the Spanish government, and, though this plea was made the basis, or rather the provocation, of war with Spain, President McKinley approached the conflict with reluctance and was literally driven into it by popular clamor.

A review of the circumstances of the dilemma in which he found himself in the early months of 1898 discloses a condition scarcely less tragical than was his violent death. A man of peace; painfully conscious of his great responsibility; harried by crafty, self-seeking politicians to whom he was indebted for the support that made him President, and not a man of strong will, President McKinley struggled in a maelstrom of contending elements that, metaphorically, swept him off his feet and made the

long-sought incumbency of the presidential office anything but the fulfilment of his hopes.

As time goes on and the shallowness of the pretence upon which war was declared against Spain is exposed, sympathy for President McKinley in the dilemma with which he was unable to cope increases, and his tragic death becomes more tragical in contemplation than it was even when the smoke of the assassin's pistol cleared away, revealing the fact that he had received a fatal wound.

In view of all this and of the many blunders of the war, it is well to change the slogan "Remember the Maine," with which a thoughtless host enlisted for war, into the adjuration "Forget the Maine," or to remember the gallant battleship because of the brave lives that went down with her. The case is one that it is well to remember only to forget.

MAKE THE BURDEN LIGHTER

"Let me carry your pail, my dear,
Brimming over with water!"
"No, I'll take hold and you take hold,"
Answered the farmer's daughter.

And she would have her own sweet way,
As her merry eyes grew brighter;
So she took hold and he took hold,
And it made the burden lighter.

And every day the burden seemed
Lighter by being divided;
For he took hold and she took hold,
By the, selfsame spirit guided.

Till by-and-bye they learned to love,
And each trust in the other,
Till she for him, one twilight dim,
Left father and left mother.

When storm and sunshine mingled they
Would seldom trouble borrow,
And when it came they met the same
With bright hope of tomorrow.

And now they're at the eve of life,
While Western skies grow brighter,
For she took hold and he took hold,
And it made the burden lighter.



STARTING AN ORCHARD ON THE THOMPSON RIVER, B. C.

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

A GREAT deal of prominence has been given from time to time in print to damaging charges that the value of fruit lands offered for sale in Canada, more particularly in British Columbia, is grossly and habitually exaggerated. In this connection I wish to refer, in the interests of readers of *The Fruit Magazine*, to an interview with Colonel Dennys, recently published here. The colonel is a man who is said to have seen many years in the British army in India, and is at present on the retired list. He had heard alluring accounts of the fortunes to be made in the fruit lands awaiting development on the Pacific coast of the Dominion, and came across the Atlantic to investigate for himself. The conclusions at which he arrived were frankly given in the interview. "If I told you," he is represented to have said,

to begin with, "what I think of the manner in which Britishers are persuaded to purchase fruit lands in the West it might not sound palatable, but might nevertheless prove useful. The representations made to the British public regarding the fruit prospects of British Columbia are very much exaggerated. I consider the prospects in Canada for young Britishers who are willing to work exceedingly good. Land in this country is quite good enough and it only suffers harm by misrepresentation. Great Britain is flooded by circulars exaggerating the conditions in the West of Canada, and there is absolutely no necessity for these exaggerations, as conditions are quite good enough without them. Britishers, on the strength of information in circulars, purchase lands and come to Canada. On their arrival here they find they have purchased

on the strength of misrepresentations and soon become discontented. They are led to expect too much. I consider it foolhardy for Britishers to purchase properties in Canada without first making a personal inspection." Asked for a sample misrepresentation, the colonel cited cases specially relating to the productiveness of the fruit trees on the lands purchased, which, he alleged, failed to bear out the claims made on their behalf and fell very far short of justifying the calculations based upon them. He took options on several properties, but had made no purchases.

Now, a few words by way of comment. I have by me a box of varied printed papers and documents relating to fruit lands for sale in British Columbia, and which I have good reason to believe are fair samples of the ordinary fruit lands literature sent across the Atlantic for circulation in the Mother-country. The booklets are, of course, full of roseate representations—how could it be otherwise with such a theme?—but I cannot recall an instance of material statements that could not, if false, be quite easily exposed by inquiry, or, if correct, be promptly confirmed. Indeed it is undoubtedly the honorable rule of

the compilers of British Columbia fruit lands booklets generally to state in the plainest possible manner the nature of the soil, the kinds of fruit most profitably grown, exact figures of quantities actually produced and sold, the net cash values realized by growers in the fruit districts in which they respectively reside, and so on, with the names and addresses of producers to whom reference is invited; and I find nothing set forth that is not in the main manifestly true and easily capable of proof. Yet there are men with this information at their disposal who, when they cross the Atlantic to personally investigate, as Colonel Dennys wisely recommends, show that they have come over with almost incredible misconceptions of the plainest matters of fact—with very bad results following. If there are, therefore, actual losers by misrepresentation, to any extent worth notice, they must be simply, as a rule, the victims of their own carelessness or utter lack of the commonest prudence, individuals who do not understand fruit conditions and deliberately take foolish chances rather than go to the slightest trouble to make themselves secure by reasonable investigation. There is, of course, a vast contrast between the social



CARVING OUT A FARM ON THE SKEENA RIVER, B. C.



CLOUD EFFECT FROM CHILLIWACK VALLEY, B. C.

Photo by Mee

and other conditions that prevail in British Columbia on the one side and in the Motherland on the other, but there are also British visitors who far too hastily place an estimate on life and customs on this side that is very greatly to our disadvantage. These are persons who, as a rule, could never by any chance be really satisfied in the midst of such outdoor and indoor attractions as a new land like ours has to offer, no matter how fruitful the soil or how great the pecuniary return it might make to honest labor. Against the statements relating to the unfortunate people referred to by Colonel Dennys I place those of His Excellency the present Governor-General of Canada on the value and advantages of British Columbia's fruit lands, and those of Lord Aylmer as recently made to me and set forth in this correspondence.

Ontario's strawberry season, taking one place with another, was not a very long one this year, the weather in most of the fruit sections of the province where the berries are usually most plentifully produced not having been as favorable as is ordinarily the case, especially towards the end. For several days before the supply finally ceased the retail price here went up to 25 cents a quart basket, not full and of rather inferior quality. At the height of the season and

in good time for coronation eating there were shown in Ottawa some of the most splendid, most luscious, largest and finest strawberries of purely local production ever displayed at this or probably any other capital. The only berries I have ever seen to approach them that I can remember were berries grown in the gardens of a septic tank centre to prove the qualities of the sewerage as a fruit food when treated first with the chemicals that transform foul liquids into crystal water and the offensive solids into inodorous field and garden manure and dry blocks ready for the furnace. These sewerage berries, however, were comparatively soft, bursting into the richness of rankness, while Ottawa's coronation berries were firm, delicious and of the finest, richest colors.

Domestic raspberries were slow coming in and as a rule of anything but the fine, tempting appearance we are accustomed to in this part of the country. The bushes were loaded at first with unusual quantities of fine fruit. Then came swarms of a minute, grayish-green mite, and the canes, shoots, leaves and fruit began to dry up and wither. Hundreds of plantations will have to be rooted up and burnt and new plantations made. Those who sprayed early and often at the beginning of the season are about the only ones who have gathered fairly good

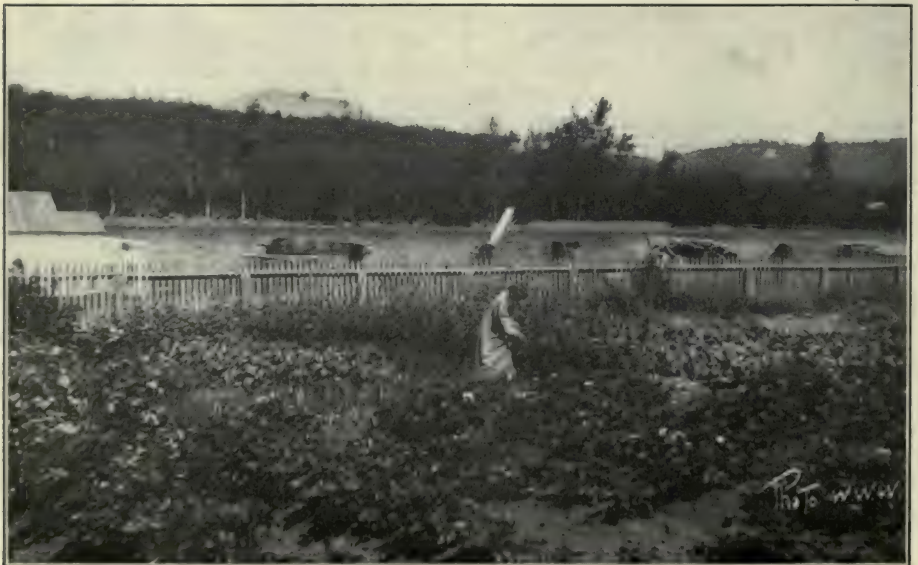
returns for their labor—and they have done well. In the market here for the first local berries, pails containing three quarts were sold for 50 cents a pail.

Dating from Hamburg, Germany, a United States Consular report has the following, which may interest readers of *The Fruit Magazine* who are engaged in apple production. "Fruit waste," it states, "particularly apple and pear peelings and cores, is imported into Germany on a considerable scale, notwithstanding that the duty of 4 marks per 100 kilos (95 cents per 220 lbs.) is the same as the duty on sound dried fruit. The total importations amounted to 3,117 tons in 1910, as against 2,219 tons in 1909, of which the United States furnished 2,979 tons in 1910, as against 2,201 tons in 1909. No part of these importations reached Hamburg, although it is not impossible that Hamburg importers might succeed in securing a portion of the business. The principal and probably the only users of evaporated peelings and cores are the syndicated jelly manufacturers; who buy their raw materials through their own managing director. These manufacturers are able to use, not only apple and pear waste, but also apricot and plum waste, all of which must be properly dried, the apple and pear

waste being shipped in casks and sacks and the other waste in pressed bales and sacks; package to weigh at least 110 lbs. gross. The prices paid vary with each fruit crop, and were particularly high this season, especially as to apple peelings and skins. Under normal circumstances these goods should cost German buyers \$3.33 to \$3.80 per 220 lbs. (100 kilos) c.i.f. port of arrival in Germany or Holland. Apricot pulp in pressed bales should cost here, in ordinary times, about \$12.30 per 220 lbs. for first-class fruit."

There is an opening in Cuba, it appears, for Canadian canned fruits. Canadian Trade Commissioner J. E. Ray, at Havana, mentions the matter in a recent report to the Department of Trade and Commerce in the following terms:

"An attempt is being made by your commissioner to interest Cuban importers in Canadian canned fruits. It is argued that Canadians are under the impression that Cubans have such a large supply of fresh fruit that no canned goods are required. However, canned peaches, apricots and pears were imported last year to the value of \$142,260, of which \$87,780 came from the United States and \$44,900 from Spain. Correspondence on the subject will be placed



GARDEN SCENE, HAZELTON, B. C.

before the Cuban buyers. Prices should be c.i.f. Havana. One firm here informs me that they handle during the year 5,000 boxes of pears, each containing 24 2 lb. tins. The duty on canned fruits is 32.5 per cent. ad valorem from Canada and other countries, and 19.5 per cent. from the United States." The Commissioner also refers to reciprocal trade. He writes: "While your Commissioner is doing everything possible to interest Cuban importers in Canadian products, he is also endeavoring to augment the export trade of Cuba to Canada in such commodities as are likely to enter into competition, particularly pineapples, bananas, oranges, sugar and special brands of Havana cigars. In conversation with the leading commission houses, it has been learned that much of the apathy displayed by them in the past with regard to Canadian trade was due to Canada's indifference to purchase from Cuba. Moreover, fruit, etc., shipped to Canadian buyers was, and is, often handled through houses in the United States. As proof of the urgency of reciprocal trade, it may be mentioned that at the present time a parliamentary committee is considering a bill which has for its object the imposition of a super tax upon the goods of all countries whose exports to Cuba exceed, disproportionately, their purchases from the latter."

Figures have been received here showing the total quantity of apples exported from Tasmania to oversea destinations during the season just ended. The aggregate is given as 749,685 cases, including 27,800 cases for New York (shipped in May) and 30,073 cases which were consigned for South America. This season's aggregate exceeds the 1910 total by 153,197 cases, and is 341,794 cases greater than that for 1909. The shipments from the island to other states and New Zealand comprised a further 201,181 cases to date, making the grand total of fruit sent from Hobart to all other ports 933,217 cases. It is expected that the shipments from Tasmania the coming season will aggregate at least one million cases.

Have a Small Fruit Garden

By MR. H. L. HUNT

A GOOD fruit garden on the average farm is conspicuous by its absence, as a rule, yet everyone enjoys fruit in its season, and nowhere can it be obtained so cheaply as on the farm. If the farmer's eyes could once be fairly opened to the profit and enjoyment possible to obtain from a good garden of small fruit, it would be considered as much a part of the regular farm work as the garden of beets, carrots, onions and cabbages.

To work small fruit with the least labor the plat should be long, for greater facility in cultivation. A plat of ground near the house that has been under cultivation one year in corn or potatoes is in a great measure prepared for small fruit. It should be well plowed and well harrowed, and have a liberal dressing of fertilizer. If stable manure is used, it should be as old and as finely composted as possible. A liberal dressing of this helps the soil to hold moisture better than do commercial fertilizers. However, the latter contains no weed seeds, breeds no insects, and is easy to apply. Fruits require an abundance of potash and phosphoric acid. This should be borne in mind when selecting commercial fertilizer for this purpose. Plants may be set late in the fall, with the exception of strawberries, and it is a good plan to prepare the ground and set as many as possible in the fall, as there is usually less stress of work than in the spring. Gardens are apt to be left until the last thing in spring work and are late and hurriedly prepared or neglected altogether.

Raspberries, blackberries, currants, gooseberries, and all bush fruits may be set in the fall after they have dropped their leaves. Some gardeners believe that they do better set in the fall. Blackberries and raspberries should be set in rows 7 ft. apart and 3 ft. apart in the rows. They should be cultivated frequently to keep the soil loose and the weeds out. Cut out all but five or six canes to the hill the first year. Potatoes, beans or some crop that covers the ground well may be grown among them

the first year. The second year they will bear moderately, the third will give a good crop. It is easiest to allow the canes to make a hedge row as wide as can be easily picked across. By cutting out the old canes and mulching with coarse manure each fall, these rows will yield fruit for several years with no other care except to keep the path between the rows cut out with the cultivator.

Currants and gooseberries require pruning every fall, and will take up little more room than the first year. Currants do best with the soil about them kept cultivated, although mulching answers much the same purpose. Black-caps have to be increased by layering the tips of the new canes in August. One hill of black or purple caps, kept cultivated and enriched, will yield several quarts of berries.

The luscious strawberry may be set either in spring or in August. Where the fruit garden is prepared and set in late fall the ground for the strawberries is best prepared thoroughly and left until early spring, when it will take but a short time to set the plants. The rows should be 4 ft. apart, and the plants set 18 in. apart in the row. Remove the buds the first summer and all the early runners. Later runners may be allowed to set in for matted rows, although the best berries and the largest yields per plant are obtained from the hill method. Good, thrifty, well-cultivated hills often yield one quart of berries. It requires somewhat more labor to keep them in hills, as they need cultivation all summer. By the matted-row method the cultivating can all be done with a horse and fine-tooth cultivator.

Where heavy snows lie on the ground all winter no covering will be needed, but where snows come and go a winter covering of straw or leaves is necessary to prevent alternate thawing and freezing and the heaving of the roots out of the ground by frost. In the spring the mulch may be raked into the path between the rows and will assist in keeping down weeds and in keeping the berries clean. Strawberries are at their best only one year, but will, if well fertilized, produce a medium crop the third year

and a small crop of small berries the fourth year. These resemble the wild berries somewhat, and where land is plentiful the old beds may be left to fruit as long as they will. A new bed should be set each year to keep them at their best, and preferably on ground that has not grown strawberries previously. On the farm this can easily be done. The amount of enjoyable food obtainable from a quarter acre of small fruit cannot be imagined by one who has never tried it, and there will be enough surplus fruit that will find a ready sale to pay for all the labor necessary to produce the whole crop.

1909 and 1910 Wheat Crop

(From the International Institute)

Country	1909 Bushels	1910 Bushels
Germany	138,000,000	141,885,000
Austria	58,468,000	57,589,000
Bulgaria	32,072,000	49,126,000
Denmark	3,771,000	4,550,000
Spain	144,105,000	137,449,000
Belgium	14,603,000	12,449,000
France	359,178,000	254,363,000
Great Britain and Ireland	63,197,000	58,235,000
Hungary	125,907,000	198,482,000
Italy	189,961,000	153,339,000
Luxemburg	617,000	624,000
Norway	312,000	314,000
Netherlands	4,113,000	4,324,000
Roumania	58,873,000	110,828,000
Russian Empire	790,245,000	776,619,000
Sweden	6,910,000	7,522,000
Switzerland	3,568,000	2,756,000
Canada	166,744,000	149,990,000
United States	737,189,000	695,443,000
British India	283,495,000	357,109,000
Japan	22,296,000	28,728,000
Algeria	34,769,000	39,375,000
Tunis	6,430,000	4,042,000
Total	3,244,823,000	3,240,141,000
Argentina, Chili, Australia and New Zealand (1908-09 and 1909-10 crops)	247,528,000	249,632,000
Total for countries not reported by Institute, taken from "Donnbuch's Floating Cargoes Evening List," including Portugal, East Roumelia, Servia, Herzegovina and Bosnia, Greece, Mexico, Uruguay, Persia, Egypt, The Cape, Cyprus and Malta	88,656,000	84,800,000
World's total	3,581,007,000	3,574,573,000

To the figures for 1910 must be added the wheat crop of the Ottoman Empire for 1910, which amounts to 164,778,000 bushels. As the Institute received no report of the 1909 crop of Turkey, these figures cannot be used for purposes of comparison.

British Columbia Reports

BY THE DEPARTMENT OF AGRICULTURE

THE special agent of the Department of Agriculture today reports as follows:

"Payette, Idaho, July 10.—Arrived here Saturday, 8th, at 4:50 p.m., and met Mr. Smith, manager of the Payette Fruit-packing Association; also met County Inspector L. E. Newcombe, who had me the entire day Monday, and so had an opportunity of seeing a great deal of the district. The County Inspection Force is actively inspecting the pear blight and the 'San Jose scale,' and it is likely that the apple crop will be in better condition, as well as slightly larger in quality than last year.

"H. E. Smith, the association manager, Inspector Newcombe, and the head shipper of the packing house estimate that from Payette alone shipments this year will be as follows: 700 cars of apples, 300 cars of prunes, 6 or 8 cars of pears, 20 cars of peaches, 4 cars of apricots, 85 cars of canteloupes, 25 cars of watermelons.

"The Payette Association named above has 156 of the largest growers as members, and expects to handle about two-thirds of the shipments. In 1910 they shipped 230 cars of prunes, and in 1911 expect 250. In 1910 they shipped 444 cars of apples, in 1911 the Association will ship 500. Prunes commence to go forward about September 1st. The carload rates on prunes are \$1.00 to Denver, Helena and Chicago, and \$1.40 to New York. Icing charges 45c to Chicago and 57c to New York; all prunes shipped in peach crates.

"The principal other shipper is Mr. Houge, buying for Denny & Co., Chicago. There are also a few smaller shippers.

"The question of successful marketing has had serious consideration since the disastrous results of last year, when Gibson & Co., of Chicago, handled the bulk of the crop on commission.

"The Payette Association, together with other associations in Southern

Idaho, are this year affiliated with the Northwest Fruit Exchange, of Portland, Oregon, and have an assistant manager here. They are guaranteeing 50c to 60c per box to growers for first-class shipping prunes, the Association doing the packing. Their drying plant will handle daily 30,000 lbs. of green fruit; other evaporators will handle 40,000 lbs. Dried fruit got good prices last year, and many shippers in outlying points will dry rather than take chances on commission men. The people prefer a price f.o.b. shipping point.

"There is a large cold storage and pre-cooling plant being erected at Payette, which will altogether handle 300 cars of fruit. This will enable them to hold their prunes in storage rather than have them rolling on through to Chicago on an uncertain market. The Northwest Fruit Exchange, I understand, will have about 60 salesmen on the road to take orders f.o.b. Last season this exchange handled 750 cars from 12 different Associations in Washington, Oregon and Idaho. For 1911 they have so far contracted for an output of 25 Associations in the three States, with an estimated output of 3,000 cars."

Reports from North Yakima:

"Apples and peaches, Yakima Valley, one-third of a crop; plums and prunes, one-half a crop; apricots, short; cherries now over; pears are good, full crop; Milton, Freewater and Walla Walla peaches and pears are only one-half crop; apples, fair."

The above report on the Southern Idaho prune crop is very valuable information indeed for the prune shippers of British Columbia. It indicates good prices for at least a large amount of our prunes, especially in mixed cars, or even in straight carloads, provided they are shipped in peach boxes.

We will furnish later information on the prices for Italian prunes, but would say that, under the circumstances, it is likely that they will fetch 80c or 85c

at least f.o.b. Okanagan points and Grand Forks. These Southern Idaho prunes take a through carload freight rate of about 75c to Winnipeg, Brandon and Lethbridge. From these points and all non-competitive C. P. R. points, add the local C. P. R. freight and additional icing charges at \$5 per ton. Growers will see that with the duty of 10c per crate, this compels a selling price in the Prairies to the retailer of approximately \$1.15, when the f.o.b. price at Payette is 60c. If the grower there is guaranteed 60c for the fruit delivered at the packing house, and the Association pays all packing charges, then the selling price must be about 20c higher to net the Association anything, making the total selling price \$1.30 in the Prairies. As a matter of fact, prices will not be as good as this, because of independent stock shipped on commission, and the Association has safeguarded its guarantee by specifying the highest class of shipping prunes; on this account we make our estimate of the selling price f.o.b. Okanagan points around 85c rather than higher.

The Markets Commissioner reports to the Deputy Minister as follows:

"Calgary, July 3.—H. J. Shinn & Co., jobbers, Spokane, quote on cherries to jobbers here, 60c per case of 10 lbs., poor grade; better grade 75c to 80c; are shipped by freight under ice; rate, \$1. The same jobber quotes strawberries \$1.25 to \$1.50 per case f.o.b. point of shipment. Shipping car today and another July 5. Express rate, \$3. There arrived by express from British Columbia during the week ending July 1:

Strawberries	1,908	cases
Gooseberries	32	"
Cherries	34	"

Total 1,974 cases

"Jobbers here report a car of mixed fruits, containing peaches, plums and apricots, leaving Lewiston, Idaho, July 5, for this point. Will ship freight rate \$1 to this point. Cost f.o.b. point of shipment—Peaches, \$1; plums, \$1; apricots, \$1.25."

"Macleod, July 5.—Creston and Kootenay district strawberries arriving in this market now, but considerable quantities of American strawberries from Spokane are shipped in direct to retailers, costing them laid down at destination \$2.60 per case, made up as follows:

Strawberries per case ...	\$1.50
Duty .....	.50
Express .....	.60
Total	\$2.60

"The express rates are the same as from Kootenay points, \$2 per 100 lbs. No carloads have arrived at this point this season, but strawberries from Creston and other Kootenay points retailers report as much finer stock than the American fruit from Spokane, arrive in better condition, fresher in appearance on opening up, and more weight to the basket. Retailers are a unit here in expressing themselves that the express rates must be reduced to British Columbia growers and shippers if they are to meet competition from American points, and that more particularly if the reciprocity agreement comes into effect. The growers and shippers of the Kootenay districts are the only producers that can successfully compete against the American shippers, as they have equally as good rates, a shorter time in transit, and the duty in their favor. Every endeavor should be made by the present growers and shippers in these districts to increase their output by planting larger areas to both large and small fruits, and not permit this very desirable trade to be absorbed by American growers and shippers, as is being done at the present to a very great extent."

"Lethbridge, July 6.—Carload of strawberries arrived here on the 4th, and another due to arrive on the 7th; are distributed from this point by freight. A mixed carload of vegetables and fruit due to arrive here shortly from Spokane. Jobbers selling retailers strawberries at \$3.25 per case. I saw considerable quantities of Creston strawberries and gooseberries with retailers here today. All arrived in fine condition, much better than

the American product. What was said of Macleod applied equally here and other points on the Crow line, respecting shippers in the Kootenay district, but strawberries and other small soft fruits from the lower mainland particularly will always be uncertain of arriving in good condition as shipped at the present time by express, when not precooled and under ice, to points on this line; but Kootenay growers can, and should, increase their output as quickly as possible, and meet the American competition both in fruit and vegetables. Below find quotation of July 3 to retail trade by H. J. Shinn & Co., jobbers, Spokane, but they give lower quotations to jobbers on large lots:

Strawberries and Cherries

Fancy Washington Strawberries	\$1.50
Red Raspberries, not quoted	
Blackcap Raspberries	2.75
Gooseberries, per crate	1.75
Fancy Bing Cherries	1.00 to \$1.25
Fancy Royal Anne Cherries ..	.80 to .85
Fancy Black Repub. ....	.80 to .90
Fancy Sour Cherries, 20 lb. box	1.00

California Peaches and Apricots

Fancy Apricots, per crate	1.75
Fancy Peaches, per box	1.50
5 per cent. off in 5-case assorted lots	
10 per cent. off in 10-case assorted lots	
Special prices on large lots	

Fancy Comb Honey

Fancy Comb Honey, 24-case frame	\$3.50
New Extracted, 60 lbs. cans, per lb. ....	.10

Farm and Garden Produce

Turnips, per cwt.	\$1.50
Beets, per cwt.	1.75

California New Vegetables

Fancy New Peas, per lb. ....	.06 to .07
Fancy Cabbage, per cwt.	\$3.25
Fancy Washington Green Onions, doz. bun. ....	.20
Fancy Washington Radishes, doz. bun. ....	.30
Washington Wax Beans, per lb. ....	.08

California Canteloupes

Fancy Canteloupes, 54s per crate	\$2.00
Fancy Canteloupes, 25s per crate	2.25

15 per cent. off in 3-case lots
25 per cent. off in 5-case lots

Texas Tomatoes

4-Basket, per crate	\$1.25
3-Crate lots	1.20
5-Crate lots, per crate	1.15

California New Potatoes

Fancy New Potatoes, per lb. ..	.03½
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California Red Onions

Fancy Onions, per cwt.	\$2.50
Fancy Onions, 3-sack lots ...	2.40
Fancy Onions, 10-sack lots ..	2.25

Hothouse Cucumbers

Hothouse Cucumbers, per case	\$1.25 to \$1.50
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"There is good demand for all kinds of early vegetables everywhere, but it would be necessary to ship in mixed carlots to these points to obtain the best returns."

"Medicine Hat, July 7.—A shipment of strawberries from Armstrong, B. C., arrived here today, for a retailer here, in bad condition; reported they would lose 25 per cent. on picking over for sale. Retailers report strawberries from the lower mainland and Armstrong as not arriving generally in good condition, and under size, but at present report berries from the Kootenay points are arriving in good shape, and fine stock. Jobbers' price, \$3.25 per case. No gooseberries here as yet; in limited demand. Very few British Columbia cherries to date; in good demand at present. The express rate from Spokane to this point is \$3 per 100; Kootenay points, \$2.40; lower mainland points, Armstrong and Vernon, \$2.55."

"Calgary, July 8.—The following are jobbers' prices to retailers:

Tradedy Plums, 4-basket crate ..	\$2.75
Clyman Plums, 4-basket crate	2.50
Peaches, Alexanders, 4-bask. crate	2.25
Apricots, Royal, 4-basket crate ..	2.00
Cherries, Bing, 24-basket crate ..	4.25
Cherries, Royal Anne, 10 lb.	1.75
Strawberries, \$3.25, \$3.40 to \$3.75, according to quality	
Cherries, Bings, 10 lbs.	2.00
Red Currants, 24-basket case, 4-5	3.00
Gooseberries, 24-basket case, 4-5 ..	3.00
California Tomatoes, 25 lbs.	3.00
Cabbage, per crate, per lb. ....	.04
Beets, new, per lb. ....	.04
Carrots, new, per lb. ....	.04
Turnips, new, per lb. ....	.04

Radish, Lettuce, Spinach, Green	
Onions and Parsley .....	.40 doz.
Cauliflower, 2 doz. pack.	4.50
Cucumbers, small, per case, \$1.50	
to	1.75
Cucumbers, large, per case, \$2.00	
to	2.50
Cantaloupes, 45s	5.75

"Below find lettergram reports from correspondents at various points in these provinces:

"Winnipeg, July 7, 1911.—Vashon strawberries about over; Minnesota raspberries arriving good, costing \$2 to \$2.25 Minnesota; Ontario gooseberries, currants, cherries and tomatoes arriving by express; good condition; demand and prices good. Washington cherries scarce at 80c to \$1 Washington. California plums, peaches, apricots on market last ten days; stock good, demand good, costing respectively plums \$1 to \$1.25, peaches 85c to \$1, apricots \$1.10 to \$1.25."

"Regina, July 7.—Supply of British Columbia berries very light this week; demand good, prices ranging from \$3.75 to \$4 for A1 stock. Soft grades hard to sell. Vashon berries on this market daily, in all cases giving entire satisfaction. Good demand for cherries; supply light."

Another correspondent at the same point, under date July 9, reports:

"Demand for berries decreasing; American supply. Fair quality; generally poor prices, ruling from \$3 to \$4. Small fruit in good demand; supply light, especially cherries. Vegetables in good demand; prices reasonable. Potatoes scarce, and selling \$2.50 per bushel."

"Moose Jaw, July 6.—B. C. cherries, 16lb. crates, wholesale \$2.50, retail \$3.50; Washington cherries, wholesale \$2.50 for 10 lb. crates; B. C. strawberries, good, wholesale \$4, retail \$4.50; Washington berries, wholesale \$4.25; gooseberries, wholesale \$2.75, retail \$3.50; cukes, \$1.75 per doz.; California plums, apricots and peaches, wholesale \$3, cost California; plums, \$1; peaches, 85c; apricots, \$1.25; cherries, 80c to \$1."

"Edmonton, July 8.—Jobbers' price California peaches, \$2.50; plums, \$2.50; apricots, \$2.35; B. C. berries, good \$4; small cherries, \$1.50, large \$3; plums,

cost California \$1; peaches, 85c to \$1; apricots, \$1.25; strawberries scarce, good demand."

The strawberry supply is diminishing and scarce, but still in good demand. American cherries will be coming in freely from now on. Early vegetables and potatoes scarce on all markets at present, and demand exceptionally good and brisk. Reports are that potatoes here will be light crop this season over these provinces. It is expected that prices will rule reasonably high for all varieties of fruit, with a possible exception of sweet cherries, which may only command medium prices. Growers and shippers will do well to hold firm to prices asked.

The reports on the British Columbia pear and apple crop indicate about as follows:

"Pears.—On Vancouver Island Bartletts will run an average of 30 per cent. of last season's good crop. Other early and late pears are reported from 35 to 90 per cent. of last year's, the principal shipping varieties being Bartlett, Boussock, Claireau, Bose, Louise Bonne. The lower mainland crop of early pears is from 50 to 75 per cent. of last year's. The later pears are variable, Hammond reporting a crop about the average; Mission an off crop, except in Boussock, which is a heavy crop, and Chilliwack light in all kinds. The Okanagan crop of pears is going to be short; previous good prospects have been reduced by a heavy drop. Kelowna, which is the principal shipper, reports a light crop. Grand Forks reports a carload of early pears, and a full crop of late ones. The Kootenay has a good crop generally, but none for export.

"California is reported exceptionally short of pears, while Southern Oregon has a good crop. On the whole, present indications are that prices will be good, and all the pears available in the province will be required to make up mixed carloads.

"Members should watch for our report about the 15th of this month, which will deal with the pear situation in Oregon, Washington and Idaho, as well as with the other crops.

"Early Apples.—Vancouver Island and

the other islands report uniformly medium crops of crab apples, principally Hyslop, with some Transcendent, which will in all probability be consumed on the coast, especially as the lower mainland will be short, though Mission reports a good crop of Hyslups there. Early apples will be variable, but on the whole less than a medium crop. Late apples on Vancouver Island will be a light crop, with King medium, and the biggest shipper. Late apples on the lower mainland are very short. There will be practically none for shipments. Lytton and Spence's Bridge both report crops about one-third of last year. Salmon Arm reports early apples good, and expects to ship thirty carloads of winter apples, which is the same as last year. Armstrong expects about fifteen carloads, principally Wealthy, MacIntosh, Wagener, Pewaukee, Jonathan and Spy being a short crop. Armstrong shipped about ten cars last year.

"B. Hoy, assistant horticulturist for the Okanagan, reports that the shipments of crabs and early apples from the whole of the Okanagan will probably total 90 per cent. of last year, and 75 to 80 per cent. of a possible full crop. He states that the crop of late apples is 'spotted,' and estimates 75 to 80 per cent.

of last year, or 40 per cent. to 50 per cent. of a possible full crop. He and other Okanagan crop reporters indicate a rather better prospect than one month ago. The Okanagan Fruit Union says that the Vernon crop of crabs and early apples will be greater than last year, and the Vernon crop of winter apples 80 per cent. of 1910. The Kelowna Farmers' Exchange reports that prospects are much better in both crabs and apples than at last writing. Summerland has a full crop of crabs, a good crop of early apples, and expects to ship about 15,000 boxes of late apples. Penticton also has an excellent crop, and these two last named points will be relatively larger factors in the situation this year than previously, as they have large acreages of young trees of high-class varieties just commencing to bear. Keremeos reports a rather light crop, after an exceptionally heavy one last year. Grand Forks now reports four carloads of early varieties, including crabs. They expect also 25 carloads of winter kinds, or about the same as last year; Baldwin being off crop.

"The Kootenays generally report good to full crops of both early and late apples, and may possibly have some to ship outside the province this year."

High-grade Nursery Business

By MR. JAMES PARKER, TECUMSEH, OKLAHOMA, BEFORE THE AMERICAN ASSOCIATION OF NURSERYMEN, ST. LOUIS, JUNE 14-16, 1911

IT seems to me that the discussion of the question of "Who are entitled to trade lists?" has underlying it the fundamental doctrine of the greatest good for the greatest number. That sounds like good philosophy. It has the sanction of age and the approval of experience. The real difficulty lies in the fact that not all of us nurserymen possess that nicely balanced portion of grace and grit, religion and common-sense which enables us to live up to this high ideal. All of us will agree that trade

lists and special prices should not be sent to those outside of the trade, if the sending of such lists tends to decrease the total amount of sales.

The economic emergencies of the nursery business have divided the trading end of the business into distinct departments of activity. We have the wholesale nurseryman, the retail nurseryman and the travelling salesman. I would have added the catalogue house, but it appears to me that these concerns embody within themselves both the busi-

ness of the retail nurseryman and the travelling salesman. They are not closely connected with the question of who shall receive trade lists. Their extensive advertising tends to increase the general interest. They reach and will continue to reach only a certain class of customers. There is no particular economy in their methods and they are not likely to butcher the prices. Their methods can reach only a small per cent. of the people.

LOCAL SALES

And why forget the local nurseryman? Because his neighbors do not buy from him. They would tell you that they mean to buy, but they don't. It is human nature not to do the things we may do any time. A man's neighbors won't make a written contract with him because they figure they can go and get the trees any time. The fall planting season comes and they are short of money or time or the weather is bad. The spring planting season comes and conditions are just the same. The surer a community is that the local nurseryman is honest and has good stock, the more completely works the machinery of delay. I have been up against the proposition, kept tab, and know how it works. In a community that bought \$5,000 worth of stock from me when I was footing it over the country selling trees from my nursery in Arkansas I got less than \$300 of sales. It was not the fault of my negligence or my laziness.

I rode the rural routes and secured the names of the farmers. I sent post cards, circular letters and price lists until I so dominated the trade that other nurserymen could not sell in my community. Out of twenty men who would look me square in the eye and say, "Jim, you're a bully good fellow. I am coming to your nursery to get a hundred trees," I would make just one sale.

In some sections of the country and in extra crop years the conditions would not be the same. But even then the people would not place orders so as to enable the nurseryman to handle the business economically and intelligently, and as a result when the people wanted trees worst he would not be able to

supply them. Protect the local nurseryman from competition! Certainly not. By any hook or crook, sell one hundred of his neighbors and you will stir up a little enthusiasm and cause fifty instead of twenty-five to buy from him.

WHOLESALE NURSERYMEN

It is the province of the wholesale nurseryman to notice the trend of planting in the great fruit-growing districts. To watch the public approval or disapproval of the different varieties and govern his plantings accordingly, to foster and encourage all movements for the beautifying of the cities, and to see that the supply of nursery stock is always up to the demand. In the wholesale nurseryman is centred that power and knowledge that gives stability and dignity to the business.

RETAIL NURSERYMEN

The retail nurseryman keeps in touch with local demands. He prepares those breezy advertisements which make the city man lonesome. He is constantly on the outlook for opportunities of increasing sales. If there is a large crop of apples in any community, he is ready to rush his salesmen in and push the sale of apple trees. If some farmer makes good money out of a peach crop, he is ready to offer that farmer's neighbors a chance to get rich growing peaches. If there is a glut in the wholesale market or a peculiar condition which causes the market to drop, thus offering him an opportunity for unusual profit, he is Johnny-on-the-spot and he knows just in which neck of the woods to go and sell trees.

TRAVELLING SALESMEN

But the real work of selling nursery stock on final analysis is found to depend upon the personal influence of the travelling salesman. Did you ever have one of those smiling knights of the grip come into the field where you were plowing? He did not put on any airs. He only quietly told you his name was Jones, and then added in a peculiarly friendly tone, "John Jones." And the way he said "John" made you feel like you was not much interested in whether his name was Jones or Smith—John was the name by which he should be known to you. And you felt like if you had not met

John before you ought to have met him. It was not necessary for John to make inquiry about your wife and children and your growing crops. There was that peculiar feeling of good fellowship in his voice and manner which made you know that he was interested in you and yours. In his cheerful presence your griefs were soon forgotten and your blues stole softly away. Then do you remember how you and John sat down on the plow handles and looked at the pictures in his book. He did not presume to advise or argue with you, but somehow his peculiarly interested and suggestive way of asking about your plans started you to thinking and planning, and as your plans developed in your own mind, you were glad to have your friend John by your side to help you work out the details and get things right. Trade with John? Of course you do! He is the sort of a man you like to do business with.

I once walked up to the counter of a busy merchant and remarked, "Have you not for the last five years been planning to plant that field in front of your house to apple trees?" He answered, "Yes, but I cannot plant the orchard this year, and I am too busy to talk to you." I laid my watch on the counter and asked him to give me two minutes. He consented. I asked him what would be his estimate on the yield on an apple tree at the ages of five, six, seven, eight, nine and ten years? He replied one-half bushel at five, one at six, one and a half at seven, two at eight, two and a half at nine and three bushels at ten.

I called his attention to the fact that the one-half bushel gradual increase of yield each year represented the amount of fruit that he would gain within ten years as a result of planting this year instead of delaying a year longer, that it amounted to three bushels per tree or six thousand bushels for the two thousand trees he was intending to plant. Then I asked him what was the difference in expense between planting this year and next. He replied only the interest on the cost of trees and labor which would amount to about \$30. I then said, "When I come back here at 1 o'clock tomorrow I want you to tell

me wherein your own figures are incorrect or give me a reason satisfactory to yourself why you are not willing to swap that \$30 for 6,000 bushels of fruit?"

On the stroke of 1 I again approached my merchant, and from the smile on his face I knew I had won. I merely asked him what varieties he wished to plant. He replied, "You know best what sorts are profitable. I will leave the selection to you." In less than one minute the deal was closed. When those trees were delivered my merchant said to me, "Had you called on me five years sooner I would now have had an orchard worth \$5,000 instead of just beginning to plant." The man who stirs people up and gets them to plant orchards and improve their homes is doing a real service for his fellow man. And, gentlemen, in spite of the abuses of the system, three-fourths of the orchards of the country have been and will continue to be planted because of the hope and energy inspired in the minds of men by the genius and good sense of the travelling salesman. It is to the interest of the nursery trade to give him a chance to do his best.

In saying we should give salesmen a chance to do their best, I do not mean that we should make cheap prices. The question of opportunity and honesty is not necessarily dependent on whether prices are high or low. I mean we should give the salesman a square deal; that our catalogues and instructions to salesmen should tell the truth; that no difference whether we sell an apple tree for one dollar or for ten cents, that apple tree should be as good a tree as we promise and bear the fruit we say it will.

Uniform prices to the retail trade are not practicable. There are communities where sales are light and consequently higher prices must be charged. There is the city trade which demands the largest and best trees. The actual cost of the tree may not be more than two cents above the cost of grades sold in thousand lots to farmers, but the cost of selling one to a dozen trees to a customer and handling the business as the city trade demands may make it neces-

sary to charge fifty cents per tree more in the city than in the country.

BE HONEST

It is written in the Book, "As a man thinketh in his heart so is he." If a stranger walks up to a group of ten people, nine of them will size him up about right. The fact that this is true proves that the Creator has written and is writing on our face and form just what we are. God does naught by halves. The fact that we can read part of the writing proves that it is all written. If a travelling salesman carries in his own mind the consciousness, the thought that he is giving real value for the money and doing a real service to the community in which he sells trees, his very looks will inspire confidence in the minds of the people. If the nurseryman who employs him has loaded him up with a mess of trickery and a bundle of lies to be dickered off on the people, that man will know in his own mind that he is playing the rascal and there will be something about him which will, in spite of his glib tongue and polished appearance, cause the people to doubt him. He will be constantly under the necessity of sparring for time or scheming for the attention of the people he calls on.

And so I say, the retail nurseryman will increase his business and do the trade a real service by giving his agents a square deal and an honest proposition to offer to the people.

Don't sell out for a mess of pottage that source of power and influence which enables your salesman to go out and get big business.

It is not true that the public likes to be humbugged.

The fact that they can be humbugged only proves that in spite of all the dishonesty we have not yet lost all confidence in our fellow man.

TRADE LIST PRICES

One of the difficulties that arises in making trade prices to people not in the trade is the fact that trade prices are so much more variable than retail prices. For instance, there are years when the growing conditions are such in the great pear growing centres that pear trees have cost twice as much to produce

them as in other years. Prices on pear trees must necessarily advance. Perhaps the same year in the great cherry growing centres the season has been favorable and the country has more than the normal supply of cherry trees. Another year these conditions may be exactly reversed.

There have been times within the last few years when one cherry tree at wholesale was worth two pear trees, and times when one pear tree was worth two cherry trees. But during this time the planters of orchards were paying about the same prices each year for pear and cherry trees. For instance, the lower prices offered on pear trees enabled the retail nurseryman to make a little better profit on pear. He passed the word down to his agents to push the sale of pear trees and slow up on cherry. Thus the extra margin of profit on any class of stock stimulates its sale and a surplus is disposed of at a profit instead of loss.

Now just what occurs if these trade prices are sent to the planters. First let me ask you if you ever saw a bargain counter rush to buy cheap trees from the local nurseryman or from a delivery yard? You never did. And you won't see mail trains overloaded with orders in reply to special prices to planters. The people want quality rather than cheapness, and they are a little suspicious of bargain lots.

Again, when a farmer writes a wholesaler for prices it means that he already has his mind made up to buy. Most likely he is acting for others in the community as well as himself. The farmers as well as the nurserymen are clanish. There is some retail nurseryman who is on the job trying to get this business, and who is in most cases entitled to it. When the farmer receives these prices he gets cold feet on the proposition of sending cash with order. No promise of good stock is worth a copper to him that does not carry with it the idea that he can pass on the worth or worthlessness of the goods before he pays for them. In a majority of cases he won't buy. He will only use his price list as a leverage to bear down prices with the local salesman. But the local

salesman cannot compete because the conditions are not the same.

In the retail business the purchaser expects to get his trees delivered at a certain place at a certain time, and to have the privilege of examining the trees to see that they are in good condition and according to contract. This means a risk as to the purchaser's ability to pay, a risk as to the promptness of the transportation company, a risk as to favorable or unfavorable weather, and a risk as to that uncertain quantity, the steadfastness of the purposes of men. All these are risks that it is better for the development of the country that the nurserymen should assume, but it means the necessity for 20 to 30 per cent. higher prices than where these risks are not assumed.

For these reasons the quoting of trade prices to planters merely means that the business becomes confused and a community that would plant 100,000 trees if properly canvassed will not plant more than 25,000 if they have had trade prices quoted them.

If wholesalers wish to sell to the people they should meet the terms which the public demands of the retail nurseryman. If it becomes a question of the survival of the fittest, send a man out and take the business; but don't block the progress of orchard planting with a five cent investment in time and postage to send out a special price list in reply to an inquiry under the vain delusion that it will bring you business, or because you are too lazy to look up the prospective customer and see whether he is a nurseryman or a farmer.

Right here let me say that this kind of business is done quite as often by the small nurseryman and retailer as by the wholesale nurseryman. They go into fits easy enough if their trade is interfered with, but they seem willing enough to send special prices to parts of the country where they are not doing business.

They also offer their remnants at ruinously low prices to the retail trade, thus interfering with the wholesale business and creating a situation that in some measure justifies the wholesale man in

lapping over the retailer and offering trees direct to planters.

Now, how do these methods compare when considered from the standpoint of our doctrine of the greatest good for the greatest number? One method means a margin of extra profit which enables salesmen to go out and get the business, the other a margin of discount which decreases business. The one method will sell 100,000 trees at a profit and start orchards enough to supply 10,000 people with fruit; the other will sell 25,000 trees at cost and block the sale of 75,000. Which is better for the interests of nurserymen and for the public good?

CONDITION IMPROVING

But these difficulties in the trade are growing less every year.

The wholesale Nurserymen's Association is doing a great work in keeping a record of the dishonest retail nurserymen and passing the word out to all wholesalers, thus making it hard for a dead beat to do business.

The Retail Nurserymen's Association is doing a good work in protecting their trade from the encroachments of wholesalers, and a still greater work in black-listing the dishonest salesman.

We are fast approaching that time when the nurserymen of the country will stand with and for each other and can present to the world a solid front of clean, honest men. And I think that a campaign of education to convince the people that our business is useful and honorable would be one of the best methods of increasing sales.

BUSINESS USEFUL AND HONORABLE

We should impress upon the world the fact that the travelling salesman is a useful citizen, and that his persuasive powers are needed to add that spark of hope and energy that induces men to plant orchards and beautify their homes. We should stand up for the dignity and honor of our business with such faithfulness and sincerity that cheap newspaper wits and goods-box loafers will no longer dare by their vulgar jokes to insult the men whose work has done and is doing so much to increase the beauty and comfort of the world.

We should impress upon the world

the thought that the men who are doing so much to make of this earth a garden of bloom, a feast of fragrance and a paradise of plenty, are doing their duty and fulfilling the designs of their Creator just as much as the man who drives the reaper, wields the hammer, or whose voice is heard from the pulpit or before the courts of justice.

The public seems willing enough to honor the agriculturist—we should remind them that the nurseryman is the highest type of agriculturist. The nurseryman puts in more labor and spends more money on the cultivation of an acre of ground than any other tiller of the soil. He spends most of his days 'mid fragrant flowers and growing trees. His mind is employed trying to understand more of the laws of life and growth. For him the secrets of the beauties of Nature have a peculiar fascination.

As he stirs the soil to warm it up, to dry it out, to conserve its moisture, to give it air and sunshine that it may unlock its storehouse of fertility for the nourishment of life, and watches its kindly response to his care, he sometimes fancies that indeed the earth is imbued with life and wisdom and that the trees and flowers he loves are to him close akin.

He looks beyond the field in which he plows and sees the great railways hurrying their trainloads of fruit from the mountains of the West to the cities of the East, and it does him good to know that his labors in the fields and his influence with men have helped to bring into being this great wealth. And looking still beyond the field of thriving enterprise, he catches a glimpse of thousands of orchards in bloom, while 'neath the trees the children play and ponder over the mysteries of Nature even as he did in childhood's happiest days, and he asks the question: Has not he done his part of the labor of the world; and, for the joys of his youth provided by those who came before, given back to the world full measure?

Irrigation Convention

The Western Canada Irrigation Association will hold their fifth annual con-

vention in Calgary, Alberta, Aug. 8, 9 and 10.

The meetings of this association have now become a recognized factor in the progressive development of Western Canada, and this convention promises to mark a still further step along lines of advancement in the science of irrigation.

Beats Fruit-Growing

PROSPECTUS OF THE GOOSE FARM, LIMITED

CAPITAL, \$300.00 IN 3 SHARES OF \$100.00 EACH

THIS company is formed for the purpose of operating a goose farm. The life of the company is limited to three (3) years. The promoter is absolutely convinced that the fortunate shareholders will reap enough profits at the end of operations to be able to retire and live comfortably ever after.

Upon allotment of the stock the company will purchase 300 geese and operate as follows:

3 eggs per goose per week equals	900 eggs per week
900 x 52 weeks equals..	46,800 eggs per year
46,800 x 3 years equals ...	140,400 for three years

No eggs will be sold, but all incubated and hatched (allowing for infertile and bad eggs 40,400) producing 100,000 geese.

Producing 3 lbs. feathers per goose during 3 years..	300,000 lbs. feathers
--	-----------------------

RECEIPTS

300,000 lbs. feathers at \$1.00 per lb.	\$300,000
100,000 pairs geese livers at 60 cents.	60,000
2 buttons from each goose bill at 10c..	20,000
100,000 dressed geese at \$1.50 each	150,000

Total receipts\$530,000

EXPENDITURE

Capital invested	\$ 300
Estimated operating expenses	190,000

Total expenditure\$190,300

Net profits\$339,700

Each stockholder receives \$113,233.33, the profit being at the rate of 37,744 per cent. per annum.

Question

On the front cover of this number appears a cut of "a remarkable apple tree." This photograph was received without any label to indicate its origin, and we shall be glad to receive the name and address of the person who kindly sent it.

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THE FRUIT MAGAZINE

Maxwell Smith, Editor.

*NATIONAL IN SCOPE AND WORLD WIDE
IN ITS SYMPATHY AND INFLUENCE.*

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What Is Time?

By REV. J. MARSDEN

I asked an aged man—a man of cares,
Wrinkled, and curved, and white with hoary hairs;
“Time is the warp of life,” he said. “Oh, tell
The young, the fair, the gay, to weave it well!”
I asked the ancient, venerable dead—
Sages who wrote, and warriors who bled;
From the cold grave a hollow murmur flowed,
“Time sowed the seed we reap in this abode!”
I asked a dying sinner, ere the tide
Of life had left his veins: “*Time!*” he replied,
“I’ve lost it! Ah, the treasure!” and he died.
I asked the golden sun and silver spheres—
Those bright chronometers of days and years;
They answered, “Time is but a meteor glare!”
And bade us for eternity prepare.
I asked the seasons in their annual round,
Which beautify or desolate the ground,
And they replied—no oracle more wise—
“’Tis Folly’s blank, and Wisdom’s highest prize!”
I asked a spirit lost; but, Oh! the shriek
That pierced my soul! I shudder while I speak:
It cried—“A particle! a speck! a mite
Of endless years!—duration infinite!”
Of things inanimate, my dial I
Consulted, and it made me this reply:
“Time is the season fair of living well,
The path of glory, or the path of hell.”
I asked my Bible; and methinks it said,
“Time is the present hour—the past is fled:
Live! live today—tomorrow never yet
On any human being rose or set.”
I asked old Father Time himself, at last;
But in a moment he flew swiftly past:
His chariot was a cloud; the viewless wind
His noiseless steeds, which left no trace behind.
I asked the mighty angel, who shall stand,
One foot on sea, and one on solid land;
“By heavens!” he cried, “I swear the mystery’s o’er:
Time was!” he cried, “but Time shall be no more!”

The Fruit Magazine

VOL. III

SEPTEMBER, 1911

No. 6

The Real Significance of Irrigation

By PROF. W. J. ELLIOTT, of the C. P. R. Demonstration Farm at Strathmore, Alta., before the Western Canada Irrigation Convention, Calgary, August 8, 9, 10.

IT is a fact that there are four essentials for the growth of all crops—heat, air, plant food and moisture. These may vary with different crops, altitudes and localities, yet the fact remains that the four are necessary. Now, as this paper is to deal with the real significance of irrigation, we shall eliminate three of the essentials, and confine ourselves to the one which is most directly concerned under the system of irrigation—that is, the water.

We find that there is no marked relationship between the percentage of water applied to the crop, whether this be artificial or natural, and the resultant crop. If we could eliminate for the time being all external influence except the water feature, then we might establish a definite relationship between the water and the resultant crop. For instance, experiments have shown that where 6 in. of water is applied, and where every drop of the 6 in. is used in the growth of the plant, there is sufficient moisture to produce a 20-bushel crop of wheat, and relatively a 12 in. application of water will produce a 40-bushel crop of wheat.

However, there are other conditions that enter into and influence this relationship, such as evaporation and subsoil conditions, that very materially interfere with this proportionate relationship. Both evaporation and subsoil conditions

must be taken into consideration very seriously in the practical application of water to land. These two, with the general slope and contour of the land, together with the irrigating head, will determine the ease with which water may be distributed, and also the amount of land that may be irrigated in a given time.

In considering the amount of land that may be irrigated successfully in one season, it brings us to what we think is the most serious drawback to all irrigation schemes, and that is the large farms, or in other words, the large acreages that men attempt to irrigate. We do not find so much fault with the large acreage as we do with the crops that must necessarily be grown upon these large holdings. All men desire to become wealthy quickly, and for the majority of irrigators the grain field presents the quickest way of attaining this object. Hence nearly every irrigation project upon this continent has been very seriously hindered at the start by the grain farmer, who in his insane desire for wealth will take the grain "short cut" to the object of his desires—a short cut that in a great many cases out of every hundred is impossible, and at the same time a "short cut" that is a "short cut" to the end of soil fertility. Grain-growing is a system of soil robbing instead of a system of farming. Whether it is irrigated

lands or not the same thing is true, grain-farming is soil-robbing. We can all point to districts in Canada and the United States where a few years ago 30 to 35 bushels of wheat were grown per acre, and today the average is 12 to 14, and, as a consequence, the farmer must feed the nitrates, phosphates and potashes before he can even grow the small yields that are possible. Some Eastern experiment stations turn out as half of their annual grist of bulletins those dealing with commercial fertilizers, and when that is the bulk of the information coming from an institution, it tells its own tale. Some grain farmer robbed that soil, and as a consequence the present-day farmers have to feed it to produce the crop.

With our irrigated farming the same thing will inevitably be true if we stick to grain-growing, and as we have already said, nearly every irrigation project is cursed with certain individuals who want to gain wealth at the expense of future generations.

In this connection we cannot say that those who launch many irrigation projects are altogether blameless, for frequently the literature that is placed in the prospective buyers' hands flaunts about nothing except the golden wheat harvest and the golden shekels that come so easily with the harvest of golden grain. This may bring eager buyers from among those farmers who are not practical irrigators, but the result is the same—it brings into the district those who wish to obtain the wealth promised as quickly as possible, and who almost invariably attempt to do it with grain-growing. There never was an irrigated project built that attained to its highest development under a system of grain-farming. Literature bearing upon any irrigation project should only mention grain-growing incidentally, and very incidentally at that. The dairy cow, the sheep, the hogs and the fat stock, the poultry and intensified farming should be the burden of every pamphlet sent into circulation. In the west from Alberta to Kansas the one thing that the grain grower fears perhaps more than any other is the hail; but if our system were built upon right lines

the dairy cow and the hogs, the sheep, the fat stock and the poultry are not likely to be hailed out. Then "the true significance of irrigation" will be fully appreciated when we fully appreciate the real purpose of irrigated lands and intensified farming. Under a system of diversified farming, where a great variety of crops are grown for the purpose of feeding stock, and so turning the raw material on the market, as the finished product, irrigation may find its highest development. Grain-growing requires all the irrigation water in from four to six weeks, while diversified farming needs it from early spring until late fall.

Then, again, there is not only the question of grain farming as compared with diversified farming, but there is the size of the farm. This is exceedingly important; 99 farms out of every 100 are too large for successful operation, and the work becomes "a struggle to get through," and consequently the result is half-worked lands, weeds and low yields. These conditions are exaggerated, too, because of the fact that competent help is hard to obtain. Here, again, the true significance of irrigation will lead a man to reduce his acreage to a point where he can rightfully and carefully handle it, and it is a fact that with a smaller acreage more carefully handled it is possible to receive larger returns than from a larger acreage poorly handled, and besides, the work may be well done and the resultant satisfaction to the individual is much greater.

We are therefore confident that the true significance of irrigation must inevitably lead us to the small farm, every acre of which is used and every acre of which will produce more dollars than by any other system.

It is astonishing what may be produced on an acre of land under a system of intensified agriculture. Here are three crops grown upon our demonstration farm at Strathmore this year which will open the eyes of some of us in this district as to the possibilities of this soil and climate. We must remember in this connection that these crops are grown under practical farming conditions. The

first is a patch of strawberries one acre in extent. To date we have taken from this patch \$350. The berries are good for another two weeks, and a careful estimate will indicate that we will yet receive from this patch at least \$150, making a total of \$500 gross. The labor for picking, boxes for shipping, etc., will amount to \$200, leaving us a net profit of \$300 per acre.

The second was a crop of green garden peas. Up to date this acre has produced \$300, and it has been carefully estimated that it will produce at least \$110 more, making a total of \$410 for labor of picking, etc. This acre will cost us \$150, leaving a net profit from the acre of \$260.

The third crop is table turnips. We only have half an acre of these turnips growing, which on a careful estimate will produce three tons. You will note that this is a low yield for this class of vegetable, but we are pulling them quite small, consequently the yield will not be as though we were to let the crop mature. However, the half acre will produce three tons of turnips, which at three cents per pound will bring us in \$180, the cost of lifting \$40, leaving a net profit of \$140 for the half acre, or \$280 for the acre.

We have simply cited these instances to show the possibilities of a small acreage of land when handled carefully.

Some of you may know that in the publications regarding our irrigation projects lying to the east of this city, we have given considerable thought to the possibilities of an 80-acre farm. When such a farm is handled simply as a general farm with dairy cows, hogs, and such crops as potatoes, etc., it is quite possible for the individual to have as representing his labor for the year anywhere from \$1,500 to \$1,800. Remember, this is when the farm is handled only as a small, general farm. If the growing of special crops was to be undertaken, this sum would be increased very materially. In this connection we might say that many of the farmers of the Huntly irrigation project are becoming wealthy on 40 acres of ground. We are thoroughly convinced that under a system of irrigation no farm ought to be larger

than 160 acres, and if the highest development is to be secured, half or a quarter of this amount will be found to be more satisfactory.

Aside from the crops as mentioned above, there are other special lines that may be conducted with considerable profit on these small farms. For instance, for the man who is willing to take up the hand selection of grain, there is almost an unlimited market and field in the west. Farmers are generally beginning to realize the value of pure seed, and the man who will get his reputation up as producing the best seed in the district will sell all that he may produce at a very enhanced price.

The few samples submitted may give you an indication as to how this work may be carried out and as to what the C. P. R. demonstration farm at Strathmore is doing along these lines for the settlers in this district. It is gratifying to note that there are a considerable number of farmers in the irrigation district who are carrying on this same line of work. Work of this kind is made possible where irrigated land is available because of the fact that the small acre plots may be cared for much more carefully than in districts where the rainfall must be depended upon.

HOW MANY APPLES DID ADAM AND EVE EAT?

Editor *The Fruit Magazine*,—

The old version says: Eve 8 and Adam 2 (Eve ate and Adam too); total 10. But this is what certain American papers have to say:

Nebraska Herald: "Eve 8 and Adam 8; total, 16.

Mississippi Gazette: "We don't see this. Eve 8 and Adam 82; total 90.

New York Screamer: "Our contemporaries are entirely wrong. Eve 81 and Adam 812; total 893.

Ohio Advertiser: "We reason like this: Eve 814 herself and Adam 8124 Eve; total 8,938.

But the Illinois Telegraph says: "Eve 8142 know how it tasted, and Adam 28142 see what it might be like; total 36,284."

More anon.

J. M. D.

The Silver Leaf Disease

By H. T. GUSSOW, F.R.M.S.

MR. H. T. GUSSOW, F.R.M.S., Dominion Government Botanist, sends us the following important information *re* "silver leaf," a new disease of fruit trees:

As the name indicates, this disease may be recognized by a silvery or milky gloss on the upper surface of the leaves of apples, plums, peaches, cherries, pears, currants and gooseberries. In this country authentic cases have only occurred on apples and plums, but in Europe this disease has often been found in the other kinds of fruits. It is somewhat difficult to recognize the silvery appearance of the leaves, which, however, may become so pronounced as to completely whiten with a kind of bluish-white tinge the foliage of one or more limbs, or often the whole tree. The present use of sprays, like bordeaux or lime sulphur, results in the covering of the leaves with a bluish or yellowish white film, and this may give the tree an appearance not unlike "silver leaf," but on wiping the leaves this covering is, of course, easily removed, while in the real "silver leaf" the color will remain. Hence it is important to distinguish carefully between these two facts, and in order to be sure of the disease, specimens will gladly be examined and reported upon by the Division of Botany, Central Experimental Farm, Ottawa. Growers should, however, try to become familiar with the appearance of this disease, which is by no means a new trouble in this country, but which has unfortunately escaped detection until the discovery of undoubted cases of "silver leaf" in Nova Scotia a few months after taking up my duties here. No doubt every reader is familiar with the silvery foliage of some of our native willows and poplars. From a distance these trees may easily be recognized on account of the bluish-white appearance of their foliage. If you bear in mind the appearance of this color when examining your orchards, and if not due to any milky film of sprays,

there exists the probability of the presence of this silver leaf disease. I again solicit samples of foliage, for we cannot be too careful in taking every possible step to prevent this disease from becoming a source of real danger to one of the country's most important industries.

NATURE OF THE DISEASE

The silver leaf is injurious to the life of the trees that have been enumerated. The trees may at first show only one limb affected; gradually another limb falls a victim, until the whole tree becomes involved. The disease works slowly, and it may take from three to five years before the disease has involved a whole tree. This depends, naturally, upon the size of the tree. During the first few years the affected branches may bear some fruit, but bearing soon becomes a thing of the past and the tree dies limb after limb. It may be said that a tree once attacked nearly always dies, and as it is our experience that it bears little fruit previously, protection practically amounts to immediate destruction of the trees which show this disease.

CAUSE OF DISEASE

The cause of silver leaf in fruit trees has been very much discussed in England, and one of the foremost mycologists of England firmly disputes any disease theory. His evidence in favor of a physiological disturbance, however, is in the face of repeated and successful inoculation experiments of very little—not to say of the slightest—importance. It is very likely that, as in many other diseases, there exist in this case, too, predisposing factors which may be of physiological nature, which render the tree more liable to contract the disease, but there exists in my mind and in that of many careful and reliable investigators (Percival, Pickering, etc.) little doubt that silver leaf has been due to an infection with *Stereum purpureum*. This fungus I have found

associated with this disease everywhere where I have traced the disease; moreover, reports from other countries (New Zealand, South Africa, etc.) also show that this species of *Stereum* is always found where silver leaf trees exist. Again, in this country I repeated the inoculation last November, and every tree thus inoculated now shows silver leaf quite plainly. Trees inoculated with *Bjerkanders sp. adusta* (another fungus which frequents dead wood of fruit trees), and check trees made with inoculation, cut made with a sterile knife, and, finally, those growing in the same row but where no wound of any kind was made, remained perfectly free from silver leaf disease.

WARNING TO GROWERS

Silver leaf disease has been recorded and has been personally observed in the following provinces: Ontario (Ottawa only), Nova Scotia (several records), New Brunswick, British Columbia, and experimental orchards in Manitoba. No case has yet been recorded from Quebec, Niagara district, or any of the other provinces where fruit is grown. This must not be taken as an indication of its non-existence. I have reason to believe that the disease is very widely spread. *The disease is very serious.* Growers in this country are advised to examine their trees very carefully, and give the disease no chance of establishing itself firmly all over the country. *The fruit industry is in real danger.* Without wishing to be an alarmist, we cannot afford to neglect the lessons taught by this disease in other countries, and every fruit-grower should unite with the department in the efforts which are now being made to arrest and control the spread of silver leaf.

PRECAUTIONS

Stereum purpureum, the fungus which causes silver leaf, is a wound parasite. The fungus is liable to gain entrance through any wound in the bark or root. It produces its fructification on dead wood only, hence its true nature has not been at once recognized. The fructification appears as more or less large depressed or horizontal brackets of a dull crimson color. Remove at once all trees that are wholly involved—do not allow

the stump to remain in the ground. It is generally on the stump, in or lying on the ground where the fructification of the fungus is produced. The whole wood of any silver leaf tree should be destroyed by fire. Take the trees out any time before fall; in fall, the fructification appears more generally. Cut away and burn any silver-leaved branches and watch the tree; if, after cutting away a branch, silver leaf appears in others throw the tree out. When removing a tree the roots also should be dug out. Then fill in the hole with stone lime mixed with soil and allow three months before planting another tree in its place. Local infections of single limbs may take place and the inoculation experiments have shown that such a limb may recover, but it is best to remove an infected limb as soon as noticed. The disease is liable to spread from limb to limb, so do not take any risks.

AN UNUSUAL OCCURRENCE

IT is not often that on the coast of British Columbia there occurs a thunderstorm of such violence as the one at Milner on August 10 last, and which, unfortunately, was the means of destroying a large barn and contents, including several head of cattle belonging to Messrs. Mufford Bros. The accident was witnessed by several people, who state that a very vivid flash of lightning appeared to strike the barn, which instantly burst into flames, and was totally destroyed in a very short time, so that it was quite impossible to save anything. The property was insured with the Mutual Fire Insurance Company of British Columbia, whose manager, Mr. William Townsley, at once inspected the loss and promptly paid the claim.

A singular incident in connection with this loss is that the same flash of lightning which destroyed the barn also destroyed the motor on one of the B. C. Electric Railway's cars which happened at the time to be standing at Milner station, half a mile away.

Continuous and Intermittent Irrigation Services

By EDGAR C. THRUPP, A. M. Inst. C.E., Kamloops, B. C., before the Western Canada Irrigation Convention, Calgary, Alta., August 8, 9, 10

ON very large irrigation farms a continuous supply of water throughout the season is undoubtedly desirable, but on small holdings the allowance made according to some standard of continuous duty may represent such a small stream that it is difficult to distribute, and the cost of manipulation per acre foot becomes excessive. The most suitable system of intermittent service for small farms seems to be a subject worthy of discussion by the Irrigation Association, and the present paper is intended as an opening for that discussion rather than as a statement of final conclusions, because it is clearly a matter for various views in different circumstances.

The first factor in the problem is the minimum flow that can be manipulated with reasonable economy of labor and efficient distribution, and that depends upon the nature of the crop and the distributing appliances provided.

Assuming nothing but rough ditches and fresh furrows it will be found that a flow of less than one quarter cubic foot per second is a poor stream to occupy one man's attention irrigating vegetables and small orchards, or preparing arable land for a crop; for such purposes a small farmer who has not been able to expend much capital in permanent distributing appliances will probably find a flow of one-half cubic foot per second to be a reasonable minimum. This rate, if discharged continuously for one hundred and twenty-five days, would give approximately one hundred and twenty-five acre feet or say two and one-half acre feet per acre on a fifty-acre farm. It follows that smaller areas should have an intermittent service arranged to suit the circumstances. If the farmer is doing all his work without assistance his time will be better spent using say one and one-half cubic feet per section for two days

a week rather than one-half cubic foot for six days, and if he has hay crops on a large proportion of his land it will be easier to manipulate the water when the crops are well established.

Vegetables require much more attention than fodder crops, and may need night labor unless very carefully planned to carry the flow through the night without over irrigating in parts.

With carefully graded small furrows a stream of one-half cubic foot per second may be divided into fifteen or twenty rows, and when sufficient capital is available it will pay in the long run to put in permanent distributing works to regulate these small streams in groups by means of sluices or valves.

Whether the intermittent service should be arranged to separate night from day is also worth consideration. It will be an advantage to some men to have a service for twelve hours out of twenty-four, so that one man can do all the distributing without excessively long hours of work. On the other hand there may be an extra attendance needed by the irrigation works staff to turn the supply on and off, unless it can be arranged for adjoining users to share the supply from one source and regulate it to their mutual advantage.

In connection with this day and night question there is a practical point to be observed. Common practice with continuous service leads to certain results with ditches or furrows spaced two or three feet apart and put under water for twenty-four or forty-eight or more hours. A twelve-hour service will not produce quite so much lateral seepage, and, therefore, the ditches must be closer together with a shorter service and a larger flow may be needful in each furrow.

The author's observations on this matter go to show that with furrows on suitable grades a service of even less than

two hours' duration gives satisfactory results with most of the ordinary vegetables, but no doubt some kinds require longer service. A good plan is to run the first irrigation in a furrow only a few inches from the line of seeds, then two or three days later run a cultivator or plow over the ground to turn the soil over the first furrow and form a new one a few inches further from the seed line for the second irrigation, and so on, until it is a foot or more away when the plants are maturing.

Whether the service is long or short there will generally be a considerable amount of water passing out of the lower end of the graded furrows to be disposed of on a second plot of ground. Only the most experienced irrigators can avoid this and they must spend a very large amount of time in running the distributing furrows and regulating the discharge of each to get a perfect result and avoid waste. The average man will do better by having a second plot of ground levelled to irrigate itself by filling furrows or flooding all over, according to the nature of the crop which should be one requiring more water than those on the upper land served by graded furrows. The system of graded furrows for higher ground leading to level furrows or level basins below, affords the operator a better chance of irrigating without waste of water or time than an all-graded furrow system.

The cultivation of the soil after irrigation is usually best timed from two to four days after applying the water, and this fact indicates that it is undesirable to have the irrigation service on alternate days where such cultivation is necessary, but rather to have three or four days in succession for irrigation and the following three or four days for cultivation.

The worker will have then a straightforward job at cultivation without interruption to attend to irrigation.

If the farm is large enough to require the employment of two or more men these considerations do not apply, as in such cases the men will arrange their own work and all the intermittent services on different parts of the farm to

fill up the full time of the water supply. Farmers depending on a supply from recorded streams often find themselves in difficulties owing to the diminished flow late in the season, and they may be quite appreciably benefited by being able to store water for a few days to secure a good flow for the next few days. Storage provided for that purpose is a very much smaller matter than storage to hold up the water in the spring for use in the late summer, but for both purposes it is desirable that holders of records for definite discharges should have the right to store water if suitable sites for reservoirs can be found.

In the event of the water supply being ample for the needs of a district or group of farms a careful study of the needs of the farmers should lead to the establishment of a satisfactory time table and system of regulation for an intermittent service which will obviate disputes and waste of water.

If the total supply is not sufficient to meet the total demand, the fixed timetable should help to minimize the troubles which will inevitably arise, but no amount of care in arranging the system can make up for a supply that is hopelessly deficient.

It is very desirable for suppliers and users of water to think over these points and exchange ideas on the subject and to keep records of their observations for reference at the right time, rather than to rely upon the vague recollections of what happened in times gone by. Suppliers are generally more careful in their records than users, and this paper is more particularly an appeal to users of water to record their observations and come forward and discuss them in a public way, as that is the most fruitful method of getting irrigation services brought into harmony with the ideas of the farmers. The average farmer will not, as a rule, be able to explain his wants in cubic feet per second, or in acre feet per acre, but will generally ask the supplier or engineer to tell him how much water he will want and confine himself to asking for a good head of water or plenty of water all the time.

Canker

By H. M. EDDIE, F.R.H.S., Kanaka Valley Fruit Farm, Albion, B.C.

UNDER this common term scientists have identified two distinct species of fungi. Their names are *Gloeosporium malicorticis* and *Nectria ditissima*, formidable names to the botanically uninitiated, but more formidable still in their actuality to the practical fruit-grower.

Much ignorance regarding these terrible pests is prevalent among fruit-growers; their perfectly evident depredations I have heard referred to as being accountable to frost. Frost may in a way help the spread of the disease by injuring unripened wood, but is not the cause of all the trouble.

I would especially draw the attention of owners of young orchards to the seriousness of canker, which may be caused by either of the above fungi, and the risks they are running in allowing the disease to go unchecked, and to the fact that it is preventable and can also be cured.

The first-mentioned, also known as *Anthracnose*, usually makes itself apparent early in the fall, when small areas of the bark about the size of the point of your finger may be noticed to have stopped growing, and to have a flattened and sunken appearance; they are also darker in color than the surrounding bark.

These spots slowly increase in size, and acquire an oblong shape when full-grown. If a knife is used to investigate it will be found in the dissection of the canker spot that under the outer layer of bark the underlying tissues are dead, brownish in color, and if the disease is far advanced the infected tissues will have parted from the healthy as if by contraction.

Unlike the latter-mentioned fungus, this one does not appear to spread by continuity of tissue, but by spores alone. Early in November the fungus comes to maturity and commences to disseminate its spores, which may be carried by the wind or other agency to other parts of

the tree, to other trees, and even to other orchards.

The cause of this canker does not appear to be perfectly understood yet, but any condition whatever which lowers the vitality of the tree predisposes it to contract the disease. Continual "wet feet" and consequent sourness of soil are active causes, therefore every means which tends to promote health ought to be employed. In young orchards where the disease has not appeared I would strongly advise a thorough spraying with the winter strength of the lime sulphur solution as a preventive.

Where it has made an appearance the affected branches may be cut off and burned, but if the trunk is affected the infected parts may be cut out and burned and the wound dressed with tar.

In old trees this latter operation, for obvious reasons, cannot be employed, but by thorough and persistent spraying the ravages of the disease may be considerably lessened. This canker fungus, unlike the other, also makes itself manifest on the ripe fruit in the form of small round spots, the tissues assuming a dark brown color. These spots are always concave in shape, and thus are easily distinguished from rot caused by bruises.

Infected fruit ought to be picked out and destroyed, as infection may quite easily emanate from the fruit room.

Turning now to the second mentioned fungus, viz., *Nectria ditissima*, we find that the symptoms are similar to that already discussed, but on closer inspection we find that there are differences. It has not got the distinctive crack surrounding the mature fungus, the *Anthracnose*. We find also that it spreads by means of its mycelium, which may travel for quite a distance under the bark, to reappear again and complete the life cycle of the fungus on some other part of the tree; but, like its neighbor, it also increases by spores which appear about the same time.

The same remedies and preventive

measures as advised above are also efficacious in this case, but the incisions to be effective must be performed on the first appearance of the disease.

Canker, in general, acts in a very erratic manner, which makes it very difficult to ascertain all the causes of the disease, for assuredly there are many. Some varieties of apples are more prone to it than others.

If one variety in an orchard cankers alongside others that do not under the same conditions, it is pretty evident that the variety is unsuitable. If the trees are young I would advise cutting over and regrafting with a variety which does not canker in the same orchard; but if they are old I leave it to the discretion of the owner whether their returns justify their retention or not. Do not omit the spraying, however; but even when all is done they are a continual menace to healthy stock around.

To illustrate the erratic actions of canker, in previous experience I have seen Ribston Pippin canker under apparently the same conditions in which Gravenstein did well, and now I find Ribston Pippin perfectly healthy under apparently the same conditions in which Gravenstein cankers "to beat the band."

This article is directed more especially to those who are planting young orchards and are new to the business. I wish you to realize that canker is one of the worst, and is the most insidious of evils the fruit-grower has to contend with, and in no other is the old adage, "A stitch in time saves nine," more applicable. Therefore, I exhort you owners of young orchards to employ every means in your power to keep your trees healthy, to spray to prevent it, and spray, and spray, and spray to get rid of it.

IN ORANGE LAND

An orange grove, with fruit of golden hue,

Bathed in a tropic sunset's gorgeous glow;

While past the trees, with glimpses showing through,

Are mountains, gleaming with eternal snow!

Franklin, Indiana.

—GEORGE B. STAFF

GRAPE GROWING

By E. F. STEPHENS

THE grape is probably the oldest of domesticated fruits. Doubtless wine was made from it before it was even brought into cultivation. The fruit is so easily grown in the middle latitudes that we are led to think that one reason it is not found in abundance on every farm is because many people believe it requires more than ordinary skill to cultivate. Frequently those who have planted a dozen vines as an experiment have not known the best methods of setting and pruning. Probably three-fourths of the grape vines planted so far and lost have been lost through lack of winter protection.

First plow the ground in narrow lands, bringing the dead furrows eight to nine feet apart. Then loosen the soil to a considerable depth by subsoiling, after which disk and harrow to put the soil in fine tilth. By using as much team work as possible in the preparation of the soil, the manual labor is lessened to a marked degree. A suitable distance for planting a vineyard is eight to nine feet, which gives 605 plants to the acre. We suggest nine feet as the width between the rows in order that it may be convenient to drive in with a hayrack and apply straw for winter covering.

Vines should be planted six to eight inches below the general level of the soil. Subsequent cultivation during the season will result in covering them perhaps eight inches deeper than they grew in the nursery row. The previous subsoiling allows the roots to run freely, conserves moisture, and enables the vine to make a vigorous growth the first year. If holes are dug by hand without team work they should be two feet deep and 30 inches across, to give the roots an abundance of room. Any common fertilizer, such as bones, put in the hole, will give the best of results; and an abundance of ashes should be applied on the surface of the ground. Posts should be eight feet in length and stand five and one-half feet above the ground. If trained to this height, on at least two wires, the vines will have sufficient light and air. Use strong, heavy posts at the ends of rows.

Lighter ones may be put between. Number nine or ten wire gives the best results.

Cultivation should be often enough to keep the surface loose and mellow, and should be continued until mid-August in the young vineyard. The latter can be cultivated by horse power; whereas one seldom takes enough time with a few vines to insure success. Where only a few vines are desired, however, they may be planted close to the walls of buildings and trained to good advantage. They appreciate the south side, and, as a rule, the hotter the weather the better the grape.

In marketing our grape crop we use what is known as the eight-pound basket, which holds when carefully packed about seven pounds. In choosing varieties it is better to consult the individual tastes of the family. If for the market its demands must be considered. Moore's Early, Worden and Concord, ripening in the order named, are the best of the blue grapes. Niagara and Empire State are the most universally planted white grapes; Brighton, Wyoming and Delaware are the choice flavor, but less frequently grown.

Within the past few years it has been found advantageous to spray, using Bordeaux mixture to combat fungus diseases. Spraying two or three times is usually sufficient. Those who have only a few vines will find a knapsack sprayer sufficient. For a vineyard use a barrel mounted on a sled with spray pump attachment, it is more effective.

The intent of cutting away portions of the vine is to leave only a sufficient number of buds on canes of the current season's growth to give such an amount of fruit the coming season as the age and strength of the vine can support. Pruning should be varied somewhat to suit the habits of different varieties. The stronger growing sorts should have more wood allowed them than the weaker ones. The vines should not be allowed to bear much fruit until strong enough to grow vigorous canes with strong laterals. Thrifty laterals develop fruit buds near the base. These laterals are cut back from four to six

buds, depending on the age and strength of the vine. Allow as much fruit to set as the vine can support and grow to perfection.

Winter covering is an all-important subject. Thousands of vines are lost annually from lack of winter protection. The vines should be removed from the wires, pressed close to the ground, and covered with two or three forkfuls of straw. Over this throw sufficient soil to prevent the winter winds from blowing through the straw, which dries the canes. Such protection is useful any winter, and absolutely necessary when the winter is unusually cold.

FRUIT-RAISING AND IRRIGATION PROJECTS AT FERNIE

By FRANK C. DENISON, in "The Trade."

DURING 1910 considerable progress was made in bringing under cultivation and placing under water service lands in the south-eastern part of the province suitable for the growing of apples and the hardier varieties of small fruits. Near the station of Baynes, on the Great Northern Railway, about 30 miles south of Fernie, an American company has purchased 9,000 acres, and has platted and put under water 1,000 acres, which is being sold in 5, 10 and 20 acre sections to settlers who intend to engage in the growing of fruits and vegetables for the markets of the mining settlements throughout the Crow's Nest Pass and in the prairie provinces to the east of the Rocky Mountains. The remainder of the property will be developed as rapidly as the demand warrants.

A similar project has been started at Elko, 20 miles west of Fernie, where several hundred acres have been platted and placed under water service by a company composed largely of Americans. In both of these undertakings water has been diverted at moderate cost from tributaries of the Elk and Kootenay Rivers.

Perhaps the largest undertaking of this kind has been inaugurated in East Kootenay by an eastern firm, which has

purchased 13,000 acres of land in the Kootenay and Columbia Valleys from the Canadian Pacific Railway land department. These lands lie in what is known as the Windermere district, where actual tests made during the last ten years have demonstrated the practicability of fruit-growing. The company is undertaking to irrigate, plat and build houses upon 4,000 acres, and plans to plant the entire 4,000 acres of fruit, principally apples, before offering it for sale. The water supply for these lands is ample, being conducted from the large lakes at the head of the Columbia River through a main canal, but not over two miles in length.

FRUIT TRADE

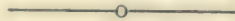
Consumers of fruit imported from Washington, Idaho, Oregon and California are looking forward with eagerness to the time when these goods can enter free of duty. Owing to the rigid inspection laws of British Columbia, Ontario apples are practically excluded from the markets of the province. The largest dealers in fruit and vegetables took all their stock last fall from Washington through Spokane dealers. The superior methods of sorting and packing fruits in vogue in this and other states have given the producers of that section a decided advantage over all competitors. As the Great Northern and Canadian Pacific railways both provide direct transportation from Spokane and the coast to Fernie, it is believed that the ratification of the proposed reciprocity agreement between the United States and Canada would lead to a great increase in the consumption of American fruit and vegetables in this territory.

In the principal stores of Fernie are seen large displays of goods from the United States, including clothing, shoes, hats, pharmaceutical preparations, patent medicines, toilet articles, fountain pens, typewriters, cash registers, tools, hardware, tobacco, cereals, fancy groceries, and all the popular magazines. Comparatively little attention is paid to catalogues and price-lists, as the successful manufacturer does his business through travelling salesmen.

ANOTHER PROSECUTION

From Napanes, Ont., comes the information that Mr. Alex. Hazelitt, of Adolphustown, was charged recently with illegal packing and marking of apples. The complaint was laid by Inspector Brown, on the grounds that the apples, when inspected at Montreal, were found to be immature, wormy and largely culls. Mr. Hazelitt pleaded guilty and was fined.

There has been a good deal of complaint this year about the shipment of green, immature apples, a practice which seems to be on the increase every year. Apples have been sold in Ottawa and other eastern cities which should have been condemned by the Public Health Inspector.



THE UNDISCOVERED COUNTRY

Could we but know
The land that ends our dark, uncertain
travel,
Where be those happier hills and
meadows low—
Ah, if beyond the spirit's inmost cail,
Aught of that country could we surely
know,
Who would not go?

Might we but hear
The hovering angels' high imagined
chorus,
Or catch betimes, with wakeful eyes
and clear,
One radiant vista of the realm before us,
With rapt moment given to see and
hear,
Ah, who would fear?

Were we quite sure
To find the peerless friend who left us
lonely,
Or there, by some celestial stream as
pure,
To gaze on eyes that here were love-
lit only—
This weary mortal coil, were we quite
sure,
Who would endure?

—EDMUND CLARENCE STEDMAN.

B. C. Imports and Exports, 1910

STATEMENT SHOWING THE IMPORTATIONS OF THE UNDERMENTIONED ARTICLES INTO BRITISH COLUMBIA DURING THE FISCAL YEAR 1910

Articles	Unit of Qty.	Quantity	Value
Hogs	No.	60	\$ 15
Horned Cattle	No.	441	8,802
Horses over 1 year, valued less \$50	No.	34	1,430
Horse, n.o.p.	No.	460	58,715
Sheep	No.	32,820	120,745
All other animals, living, n.o.p. ....	\$	..	19,881
Total animals			209,588
Cod, haddock, ling and pollock, fresh	Lbs.	54,125	3,309
Cod, haddock, etc., dry-salted	Lbs.	362,087	20,986
Halibut, fresh, not in barrels	Lbs.	1,007,173	45,336
Herrings, fresh, not in barrels	Lbs.	1,000	20
Herrings, pickled or salted	Lbs.	19,329	1,206
Mackerel, fresh	Lbs.	1,248	116
Mackerel, pickled	Lbs.	2,755	244
Oysters, fresh in shell	Brls.	547	6,007
Oysters, shelled, in bulk	Galls.	6,119	15,657
Oysters, canned, in cans not over 1 pint ..	Cans	261,546	29,304
Oysters, canned, not over 1 quart	Cans	11,659	6,352
Oysters, preserved or prepared, n.o.p.	Lbs.	10,116	727
Lobsters, canned	Lbs.	235	72
Bait fish, salted, not in barrels	Lbs.	542	49
Salmon, fresh	Lbs.	837,513	18,453
Salmon, canned, prepared, etc.	Lbs.	270	24
Salmon, pickled or salted	Lbs.	490	44
Fish, smoked or boneless	Lbs.	100	2
Sardines, boxes over 20 and not over 36 oz.	Boxes	4,468	286
Sardines, boxes over 12 and not over 20 oz.	Boxes	18,948	1,217
Sardines, boxes over 8 and not over 12 oz.	Boxes	4,297	689
Sardines, boxes 8 oz. or less	Boxes	566,845	36,483
Fish preserved in oil, n.o.p. ....	\$	..	1,595
Fish, all other, fresh	Lbs.	3,756	354
Fish, fried or dried, in barrels	Lbs.	116	8
Fish, all other, in barrels, pickled, etc.	Lbs.	1,240	26
Fish, prepared or preserved, n.o.p.	Lbs.	283,328	24,487
Total fish			213,053
Apples, green	Brls.	28,103	138,599
Blackberries, gooseberries and raspberries..	Lbs.	332,656	34,305
Cherries	Lbs.	113,689	13,805
Cranberries	Bush.	2,183	6,331
Currants	Lbs.	25	2
Grapes	Lbs.	532,536	31,808
Peaches	Lbs.	706,460	31,571
Plums	Bush.	7,803	22,374
Quinces, apricots, pears and nectarines	Lbs.	657,086	28,223
Other green fruit, n.o.p. ....	\$	..	132
Total fruits			307,150
Melons	No.	160,736	13,493
Potatoes	Bush.	58,094	44,202
Potatoes, sweet and yams	Bush.	7,319	6,846
Tomatoes, fresh	Bush.	3,389	8,864
Vegetables, n.o.p. ....	\$	..	110,938
Total vegetables			184,343

B. C. Imports and Exports, 1910—Continued

Sawed boards, planks, deals, etc.	M. ft.	2,411	\$ 29,320
Planks and boards, dressed on one side ..	M. ft.	14,782	183,149
Laths	M.	171	463
Shingles	M.	1,330	2,318
Total lumber			215,250
Bituminous coal	Tons	20,319	72,985
Anthracite coal	Tons	57	496
Coke	Tons	1,552	3,871

STATEMENT SHOWING THE EXPORTS OF THE UNDERMENTIONED
ARTICLES FROM THE PROVINCE OF BRITISH COLUMBIA
DURING THE FISCAL YEAR 1910

Articles	Unit of Qty.	Canadian Produce Quantity	Value
Coal	Tons	1,321,827	\$3,925,580
Cod, dry-salted	Cwt.	1,963	10,829
Cod, wet-salted	Cwt.	18	94
Mackerel, fresh	Lbs.	200	17
Mackerel, pickled	Brls.	..	5
Halibut, fresh	Lbs.	59,227	2,779
Herrings, fresh	Lbs.	478,050	5,336
Herrings, pickled	Brls.	247,490	560,396
Herrings, smoked	Lbs.	9,731	612
Herrings, canned	Lbs.	48	5
Sea fish, other, fresh	Lbs.	3,940	158
Sea fish, other, pickled	Brls.	144	277
Sea fish, other, preserved	Lbs.	201,428	12,330
Oysters, preserved in cans	Lbs.	7,405	621
Oysters, fresh	Brls.	66	728
Bait fish	Brls.	4,699	9,294
Clams or other	Brls.	50	141
Lobsters, fresh	Brls.	5	109
Lobsters, canned	Lbs.	4,876	1,077
Salmon, fresh	Lbs.	290,495	14,786
Salmon, smoked	Lbs.	1,873	178
Salmon, canned	Lbs.	30,407,816	3,868,112
Salmon, pickled	Brls.	36,458	109,320
Fish, other, fresh .....	\$	..	1,103
Fish, other, pickled	Brls.	136	635
Total fish			4,598,942
Laths	M.	11,007	31,256
Pickets	M.	808	11,634
Planks and boards	M. ft.	79,150	1,060,007
Shingles	M.	108,852	240,127
Shooks, other .....	\$	..	36,001
Staves, other .....	\$	..	16,595
Lumber, all other .....	\$	..	35,165
Total lumber			1,430,785
Horses under 1 year old	No.	9	5,820
Horses over 1 year old	No.	330	96,795
Cattle, under 1 year old	No.	55	2,593
Cattle, over 1 year old	No.	60	19,305
Swine	No.	6	50
Sheep, over 1 year old	No.	35	770
Poultry, live .....	\$	..	1,515
Other live animals .....	\$	..	5,164
Total animals			132,012

B. C. Imports and Exports, 1910---*Continued*

Apples, green	Brls.	1,923	\$11,079
Berries, all kinds .....	\$	..	608
Fruits, canned or preserved .....	\$	..	300
Fruits, all other .....	\$	..	1,472
Total fruits			13,459
Vegetables, canned .....	\$	..	586
Potatoes	Bush.	6,873	4,873
Vegetables, all other .....	\$	..	1,097
Total vegetables			6,555
Coke	Tons	25,224	111,635

Forget and Remember

Let us forget the things that vexed and tried us,
 The worrying things that caused our souls to fret;
 The hopes that, cherished long, were still denied us,
 Let us forget.

Let us forget the little slights that pained us,
 The greater wrongs that rankle sometimes yet;
 The pride with which some lofty one disdained us,
 Let us forget.

Let us forget our brother's fault and failing,
 The yielding of temptation that beset,
 That he, perchance, though grief be unavailing,
 Cannot forget.

But blessings manifold, past all deserving,
 Kind words and helpful deeds a countless throng,
 The fault o'ercome, the rectitude unswerving,
 Let us remember long.

The sacrifice of love, the generous giving,
 When friends were few, the handclasp warm and strong,
 The fragrance in each life of holy living,
 Let us remember long.

Whatever things were good and true and gracious,
 Whate'er of right has triumphed over wrong,
 What love of God or man rendered precious,
 Let us remember long.



PACIFIC COAST NURSERYMEN'S ASSOCIATION, SAN JOSE, CALIFORNIA, JUNE 23, 1911

Editorial

FORWARD

JUST one year ago we made an important announcement under the above caption, indicating that we proposed making ourselves worthy of the continued confidence and support of our readers and advertisers by making Volume 2 larger and better than our first effort. We have now reached the end of Volume 3, and once more wish to acknowledge collectively the numerous communications received indicating the hearty appreciation of our readers in all parts of the civilized world. To our advertisers we wish to express our appreciation of their patronage, and gratification at being able to produce satisfactory results. Along with the many letters of commendation which we have received during the past year have come frequent suggestions that we extend the scope of *The Fruit Magazine* to include general farm products as they affect growers, dealers and consumers, as well as fruit. In response to the call of our patrons we have decided to change the name of our publication to *The Fruit Magazine, Scientific Farmer and Canadian Citizen*, and shall endeavor to justify that title by dealing in a comprehensive manner with all subjects of particular interest to the up-to-date agriculturist, and the broad questions with which every Canadian citizen, whether in town or country, should be familiar.

Our magazine in future should, therefore, be an honored monthly guest in every Canadian home, whether growers, dealers or consumers, and likewise a welcome visitor in other parts of the world where the name of Canada has become synonymous with the spirit of progress and development.

As in the past, our aim in the future shall be to produce a first-class, high-grade magazine that will supply wholesome, instructive and entertaining reading to all classes of citizens, whether old or young, rich or poor, in every walk of life.

Agriculture being the basic science upon which rests the superstructure of all our national wealth, in promoting the interests of the producers and consumers of agricultural products we serve all classes, and also have a right to deal with all subjects affecting the highest standard of citizenship, although we shall continue to avoid the questionable byways of party politics. In future the price of this magazine will be 15 cents a copy, or \$1.50 a year, mailed to any address in the world, although advance subscriptions from our friends in Canada and the United States will be accepted up to the end of 1911 at the old price of \$1.00.

* * *

CALGARY IRRIGATION CONVENTION

THE fifth annual Convention of the Western Canadian Irrigation Association was held in Calgary, Alta., August 8, 9 and 10, and while we can only make brief mention of the fact and produce one or two of the papers read on that occasion in this issue, the balance will be published in *The Fruit Magazine, Scientific Farmer and Canadian Citizen* next month. The Convention next year will be held at Kelowna, B. C., when perhaps a larger attendance may be expected.

The officers elected for the ensuing year are: Hon. president, His Honor Lieut.-Governor Paterson, of British Columbia; president, Hon. W. S. Ross, Minister of Lands, British Columbia; first vice-president, Mr. J. S. Dennis, Calgary, Alta.; second vice-president, Mr. R. H. Agur, Summerland, B. C.; secretary, Mr. N. S. Rankin, Calgary, Alta.; treasurer, Mr. T. H. Dumoulin, Kelowna, B. C. Additional members of the executive committee, Mr. A. F. Fulton and Mr. R. M. Palmer, Kamloops, B. C.; Mr. W. H. Fairfield, Lethbridge, Alta.; Mr. C. W. Peterson, Calgary; Mr. E. M. Carruthers, Kelowna, B. C.,



FIG. 1.—FRUIT PICKING LADDERS FOR LARGE TREES

and Mr. W. C. Ricardo, Vernon, B. C. Mr. J. S. Dennis, Mr. R. H. Agur, Mr. W. H. Fairfield and Prof. W. J. Elliott, with Mr. R. M. Palmer, Mr. W. C. Ricardo, Mr. C. W. Peterson and Mr. A. S. Dawson, as alternates, were appointed delegates to the National Irrigation Congress at Chicago this fall.

Some objection was raised to Resolution No. 5 as out of order in an inter-provincial Convention, it being a subject in which Alberta alone was concerned, but after considerable discussion the resolution was finally carried. It is to be hoped, however, that in future the executive will see that local questions are not permitted to be raised in the Conventions of the Association.

The resolutions passed at this Convention will appear in the October num-

ber of *The Fruit Magazine, Scientific Farmer and Canadian Citizen*.

* * *

B. C. FRUIT CROP

AFTER a careful survey of the chief fruit-growing districts of British Columbia, we are able to state with a fair degree of certainty that the apple yield, while of good quality, will not exceed two-thirds of a full crop this year. Peaches are practically nil, Penticton being the only point from which any considerable quantity may be shipped. Cherries were good, particularly in the Kootenays. Plums and prunes are a fair crop, and apricots, though not extensively grown, are good. The Okanagan Valley will probably ship about 300 cars of fruit all told.

Picking and Packing Apples

By R. M. WINSLOW, Department of Agriculture, Victoria, B. C.

PICKING and packing time is the most important and critical period in handling the apple crop of British Columbia. The distance from the prairie market compels careful handling, and the competition of our American neighbors requires the highest standard as to the character and finish of our pack.

In the Okanagan, Salmon Arm and Grand Forks the local market no longer consumes any considerable portion of the crop. Even though the prairie market is more critical as to the quality of the pack, every local market in the province will pay a better price and afford a steadier market for the higher grades of fruit, properly packed, and the standard of quality will undoubtedly continue to rise.

The Department of Agriculture has recognized the great importance of proper technical information as to picking and packing—particularly the latter—and has endeavored to serve the great need in this direction by the establishment of packing schools over the entire province, of which there were thirty conducted during the early months of the present year, with a total attendance of 385.

It is not practicable for all to attend these packing classes, even though they are continued in future years, and the present article is intended to be as helpful as possible to those who are handling their crop under the disadvantage of inexperience of up-to-date methods.

PICKING

The greatest problem of picking is that of selecting the proper time. Even the inexperienced fruit-grower realizes that the stage of maturity when picked is of vital importance in the future life of the apple. He knows that fruit picked too green is lacking in color, in flavor and in keeping quality, and that apples left too long lose in keeping quality far more than they gain in color. The following general rules will be found of value in deciding when apples should be picked:

1. Pick when the fruit parts easily from the fruit spur. Varieties like the McIntosh Red, Fameuse, Pewaukee and Wealthy are inclined to drop easily, and the fruit-grower will pick them earlier than those kinds, such as Winter Banana, which are inclined to hang more firmly.

2. The color of the seeds is a fairly certain guide in the red varieties, the rule being to pick when the outer edges



FIG. II.—SHOWING ORCHARD BOX ON TRUCK TO RIGHT. HOLDS ONE BUSHEL OF FRUIT THE CLEATS ON TOP OF ENDS STRENGTHEN IT AND PROTECT FRUIT FROM BOX PILED ON TOP



FIG. III.—THE LONG BOX, MEASURING 10x11x20 INSIDE, IS THE LEGAL STANDARD CANADIAN BOX; THE OTHER IS THE WASHINGTON AND OREGON BOX

of the seeds are turning dark. This is not always a safe rule, because in the season of 1910 the seeds of even the latest varieties were quite black by the middle of September. Again, early apples are commonly picked before the seeds show very much color, and yellow apples are picked when the seeds are black.

3. The color of the fruit is, perhaps, the principal guide. Red apples should get as much color as possible consistent with keeping quality. The Jonathan is often left to hang too long, in order to secure color, thereby inducing core rot and poor keeping quality.

4. Winter apples should have some flavor before picking, though, if allowed to remain until ripe enough to eat, their keeping quality is very much impaired.

The present tendency is to remove part of the crop at first, leaving the balance to get greater color and size. Winter apples are usually all picked at once, but we believe that in a few years producers

of fancy fruit will go over the trees at least twice to secure the greatest possible percentage of fancy fruit.

To separate the fruit from the spur easily is a matter in which much is learned by experience. Usually at picking time the fruit removes easily if taken in the hand and given a slight twist. With closer hanging varieties the forefinger may be pressed against the junction of the stem and the fruit spur when the fruit is taken in the hand. Too much care cannot be taken to prevent the loss of stems or the breaking off of fruit spurs. No fruit with the stem pulled out is really a No. 1 apple, and with careless methods dozens of fruit spurs may be easily pulled from the tree. As a matter of fact, it is usually much easier to separate the fruit at the right place than it is to break off the spur or pull out the stem. This point deserves watching closely. In one district last year we saw 20 per cent. of the fruit come into the packing house with stems

pulled out, and we have also seen instances where hundreds of fruit spurs were destroyed by careless pickers.

Weather conditions are of importance in connection with picking. Fruit should not be picked with frost in it. When the weather is very hot it is best to pick only during the cool part of the day. If fruit must be picked when wet from rain or dew, it should have opportunity to thoroughly dry before going into the packing house.

Recent experiments have conclusively shown the great necessity for immediately cooling off all apples for long-distance shipments or for storage. The ripening process is almost entirely stopped at low temperatures, but proceeds very rapidly if fruit is kept at a temperature of 70 deg. or 80 deg. It is conceivable that a winter variety might be required for an early December market, in which case it would be advisable to keep the fruit warm as long as possible. This would be so rarely the case, however, that the general rule of cooling the fruit as much as possible immediately after picking is a safe one for all circumstances.

The greatest care must be used to

prevent bruises, skin punctures and pulling-out of stems. With some tender-skinned varieties the injury from carelessness may be 50 per cent.

PICKING APPARATUS

The only essential requisites for picking are ladders, fruit receptacles and good pickers. A good fruit picker is careful, thorough and rapid in his work. At the present time white men are mostly employed in British Columbia, and because of the various disadvantages of the yellow races for this purpose, it is likely that this practice will continue.

Picking ladders are of many different types, to meet varying conditions. A good ladder should be strong enough to carry the picker without danger, should be light enough to be easily portable, and the base must be broad enough in proportion to be reasonably steady. Fig. No. 1 shows some types, 10 to 14 feet long, which meet all these requisites for fruit from 9 to 16 feet from the ground.

For fruit from 7 to 10 feet from the ground shorter ladders are used.

Apple-picking devices have been patented in hundreds, but no entirely practicable one, for Western conditions at least, has been devised. To pick by

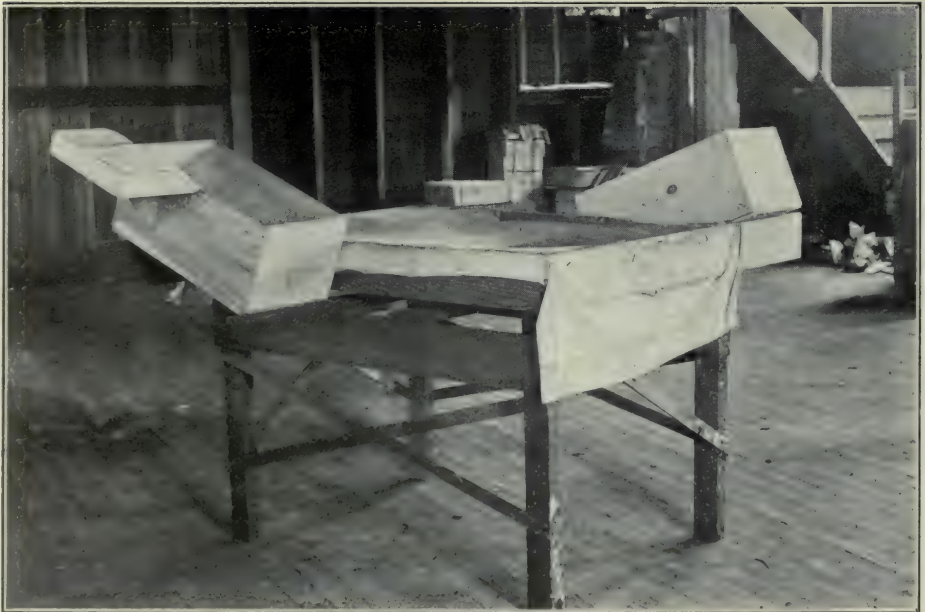


FIG. IV.—APPLE PACKING TABLE FOR TWO RIGHT-HANDED PACKERS, $3\frac{1}{2} \times 4$ -FT., BURLAP TOP. NOTE PAPER RACK HOOKED ON TO BOX

hand is the only practical method we can recommend.

Receptacles for receiving fruit from the hand of the picker are of different types. The ideal receptacle must not bruise the fruit in any way. It must be light, convenient, hold about fifteen or twenty pounds of fruit, be reasonably inexpensive, and adapted to empty the fruit into the orchard box without bruising. Bags are commonly used, but are inconvenient, and bruise the fruit very much. Pails and oil tins fitted with handles meet the general requirements, except that the apples must be poured from them, which is a decided objection. The same applies to the usual baskets. Some of the patent baskets, by which the fruit is emptied through the bottom, are very satisfactory indeed.

Orchard boxes are necessary to transfer the fruit from the orchard to the packing house. One of the best types we have seen holds one bushel of fruit, 2,200 cubic inches, and has a $\frac{1}{4}$ inch cleat across each end at the top, which shields the fruit to some extent from the box piled above it. This orchard box, with cleat, is shown on the truck to the right in Fig. No. 2. It costs 12 cents at the factory, and is good, with care, for many seasons.

The fruit in the orchard boxes should not be left long in the orchard, and should never be left to stand in the sun or rain. The fruit should be kept COOL, and DRY. In following these two rules, the grower will do much to improve the product.

Hauling the fruit to the packing house should be done only on springs, never on heavy, springless wagons, and protected by covers from dust and weather. In British Columbia we have not as yet paid enough attention to this point.

THE APPLE PACKAGE

General sentiment in the province seems much in favor of the total adoption of the box 10x11x20 in., inside dimensions, for all Canadian markets, as well as for export. (Fig. No. 3.) The Department of Agriculture teaches packing in this size only, believing it to be the most suitable for the province. It also



FIG. V.—SHOWING BULGE AND HEIGHT AT ENDS. THE "JUST RIGHT" BOX SHOWS FRUIT ABOUT THREE-EIGHTHS OF AN INCH ABOVE ENDS

TOO HIGH

TOO LOW

JUST RIGHT



80, 88 and 96 DIAGONAL PACK. THIS CUT IS IN PLACE OF FIGURE VI, REFERRED TO IN THIS ARTICLE, WHICH WAS LOST BY THE ENGRAVERS.

has the endorsement of the B. C. Fruit-growers' Association.

Lumber as cut for apple boxes should meet the following specifications:

End pieces, $11 \times 10 \times \frac{3}{4}$ in.

Sides, $21\frac{1}{2} \times 10 \times 5-16$ in.

Top and bottom, $21\frac{1}{2} \times 5\frac{1}{2} \times \frac{1}{4}$ in. (two pieces each).

Cleats, $11 \times \frac{3}{4} \times \frac{3}{8}$ in. (four to the box).

The two-piece top is objectionable if one piece is sawn thicker than the other. On this account some shippers object to using anything but one-piece tops and bottoms 11 inches wide. The two-piece has much more spring, and so makes a better shipping package.

Sides of less than 5-16 in. thick are somewhat liable to bulge. This is a serious defect in the box, but is not likely to occur if the top and bottom are sufficiently flexible. If shippers use one-piece top and bottom, then the sides had better be $\frac{3}{8}$ in.

Apple boxes of the best spruce cost \$12.50 to \$14.00 per hundred, knocked down, at the mill. Our American competitors now use a great deal of fir and other cheaper woods, at a saving of $1\frac{1}{2}$ c to 2c per box. Of whatever material, the lumber must be of high quality, evenly sawn, and free from knots. At least one side should be dressed, and this is put inside when making up.

The time used for making up should not cost more than $\frac{5}{8}$ c per box. The nails used are 5-penny, cement-coated, four on each side, top and bottom, at each end. With cover, the box takes a total of 32 nails.

WRAPPING

Almost all No. 1 British Columbia apples are now wrapped. It is to be hoped that small independent shippers, as well as the large associations, will see the advantage of this practice, so that this season all our best fruit will go to the markets wrapped in paper. The advantages are as follows:

1. Wrapping gives a more finished appearance to the package. It presumes a high-grade article, so finding a readier sale and a steady market and a higher price.

2. Wrapping improves the keeping quality, preventing disease spreading from fruit to fruit.

3. The paper serves as a cushion (see Fig. No. 6), preventing bruising, and so prolonging the life and improving the appearance.

4. Wrapping makes an elastic but firm pack, much less liable to shift, and much quicker to put up.

5. It protects the fruit from changes in temperature and absorbs surplus moisture.

The cost of paper for wrapping is almost saved by the weight of fruit which the paper displaces. Experienced packers do as quick or quicker work wrapping than without it. There is very little foundation for any objection to wrapping, save that there is quite a knack in it, which some packers seem unable to grasp.

The wrapping paper most largely used in this province is styled the "Duplex,"

so called because it is calendered on one side and rough on the other, the latter being turned to the fruit. Yellow papers are not in favor with the trade.

"Duplex" costs this year, f.o.b. Vancouver, to members of the British Columbia Fruit-growers' Association:

In lots of 100 lb., up to 5
tons 6¼c per lb.
In lots of 5 tons or over .. 6c per lb.
In carload lots 5¾c per lb.

The sizes most in use are:

8x8 in. for 5-tier and the larger 4½-tier fruit
8x9 in. and 8x10 in. for 4½-tier
10x10 in. for 4-tier and the larger 3½-tier
10x12 in. for very large fruit

For the convenience of the fruit-grower ordering paper, the following table shows the number of sheets per pound:

8x 8 in. 375 sheets
8x10 in. 300 sheets
10x10 in. 250 sheets

When apples are not wrapped it is best to use lining paper for the boxes. The brand used in the province is termed "White News," and sells for 4½c a pound in Vancouver. The sheets are cut to size 20 in.x26 in., two being used to each box. A pound contains 25 sheets.

Layer paper is used only for exhibition fruit and that intended for shipment to Great Britain.

METHOD OF WRAPPING

The details of the method adopted by packers vary, and it is impossible to describe the details of any particular method on paper. The general system which all use is as follows:

The right-handed packer stands with his right side to the packing-table, picks up the paper with the left hand, the apple with his right.

He places or drops the apple into the paper, the side or end which is to be packed uppermost being placed downwards on the paper in the palm of the left hand. The fingers of both hands are used to make the wrap in the fewest possible motions, and the apple is placed in the box with the left hand.

THE PACKING-TABLE

The type of packing-table now most generally used is that shown in Fig. No. 4. The original of this photograph has seen hard service for several years, and with careful renewal of the burlap top, such table is good indefinitely. As the fruit does not come in actual contact with the wood, even the roughest material may be used. Every fruit-grower who packs any fruit at all should certainly be equipped with at least one such table. It can be made at home at a cost of about a dollar or two for time, and less than that for lumber and nails. The burlap can be bought at almost any store, or a couple of bags can be pieced together and give good satisfaction.

For convenience in the packing schools we use a table of this type, but made 4½ feet square, so as to accommodate four packers. We do not, however, recommend this table for commercial purposes. The fruit receives much less bruising and overhauling on the smaller table, which is also much more convenient to put fruit on to and for cleaning off; and the smaller size fits in with pack-

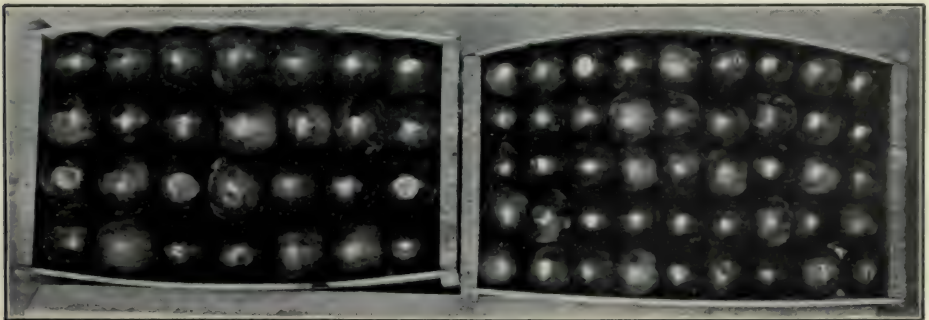


FIG. VII.—SQUARE PACK OPENED ON THE SIDE. THE 112 BOX ON THE LEFT WOULD PACK 113, AND THE 225 BOX ON THE RIGHT, 225 DIAGONALLY BETTER.

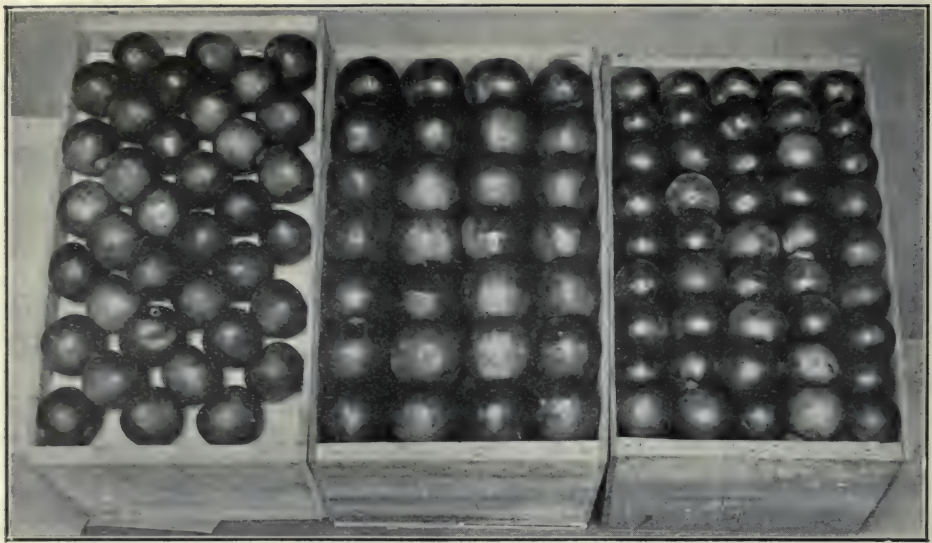


FIG. VIII.—OFFSET PACK ON THE LEFT, SQUARE PACK CENTRE AND RIGHT, BOTH BEING DISCARDED IN FAVOR OF DIAGONAL PACK

ing-house routine, as usually arranged, much better.

This table will hold about 100 lbs. of fruit. Less than that is better, but in such a case the fruit must be graded to size.

Packing on a bench instead of on tables is gaining in favor in some districts, and this system was used in the Summerland and Penticton packing schools this year. The operator stands in front of a sloping bench, on which are placed five apple boxes, with an orchard box of fruit at his right hand. The packer picks up the apple nearest to hand; if it will fit in to any of the five boxes before him he wraps it as he puts it in its place. If over or under size, it goes into one or two boxes placed conveniently near, and if a cull, is run down to a box on the floor. This system is of advantage with skilful packers, who can tell at a glance what packs will be most useful for the fruit in the orchard boxes. The bench is quickly and cheaply constructed, the fruit receives a minimum of handling, and consequently of bruising. Experienced packers have widely different opinions on the relative methods of these two systems. For the beginner we have no doubt but that the table is preferable.

THE ESSENTIALS OF A GOOD PACK

While a packed box of apples looks

simple enough, it must fulfil certain requirements to be considered well put up.

First, and most important, the pack must be firm. There must be no room for the fruit to shift in any way. It is often possible to stand a box on end without the cover nailed without any of the apples falling out. This is usually impossible if each apple does not touch all those surrounding it in the proper way.

The bulge or swell illustrated in Fig. 5 is also important. The idea is that as the apples lose moisture and shrink, the cover which has been pressed down tightly over the bulge will contract and continue to hold the apples firmly. The bulge is secured by turning the apples when packing, so that the slightly longer diameter is vertical. Doing this becomes second nature by practice. It is sometimes necessary to turn the end apples on their side, in the end-on packs, in order to get this just right.

In order to create some pressure on the end rows of apples, the fruit at both ends should be from $\frac{1}{4}$ to $\frac{3}{8}$ of an inch above the top of the box. The cover presses this down that much quite easily without bruising, and the elasticity of the fruit will keep it tight for some considerable time. The right height is illustrated in Fig. 5 in the left-hand box.

There is at present some reaction

against the bulges of $1\frac{1}{2}$ to 2 inches common a few years ago. Experience has shown that a bulge of $1\frac{1}{4}$ inches, counting both top and bottom, is sufficient. More is necessary with the end-on packs than with the side packs. This applies also to the height of the ends.

Regularity of pack is very important. In Fig. No. 6 the left-hand box opened at the side shows how the packer may start to pack a box in one side, and may change half-way through the box. Where the change is made apples are liable to be very much bruised, on which account this practice is to be condemned, and the application of the term "stacked pack" indicates the essential dishonesty of this proceeding, which is poor packing and worse morality.

The attractiveness of the finished pack is very essential. Our apples rely a great deal on their appearance for high-priced sale, and the finished pack should be attractive in the regularity of size, smoothness of the wrap, and the alignment of the fruit in the box.

The above points deal only with the mechanical operation of packing. Not less essential, but even more so, is the grading of the fruit to size and to color. Grading to size is usually done in British Columbia by the packer himself, and he

should use every effort to make the box uniform throughout. A good packer must be conscientious, quick and accurate. The ability to learn to pack fruit is natural, and a big percentage of people do not possess it. Packers are born, not made.

Our apple-box is the result of many experiments, some twenty or more sizes having been extensively used in California before the present sizes were finally adopted. The result is that practically all sizes and shapes of apples likely to be found in this province can be put into our boxes in the diagonal packs. In the very large sizes it is necessary to pack some apples on the square, three across and three deep in the box. The square packs shown in Figures 7 and 8, as well as the offset, we know from actual trial are not necessary. The buyers are beginning to be suspicious of packers who still insist on their use, and quite rightly so.

In the series of Figures 9 to 13 there are illustrated the principal diagonal packs. A study of these will show the beautiful regularity of the diagonal system, and the flexibility of this pack to meet the requirements of apples of different shippers is learned only by experience, but as soon as a packer grasps



FIG. IX.— $\frac{3}{4}$ -TIER DIAGONAL PACK, FOUR LAYERS DEEP. THESE THREE BOXES CONTAIN 72, 80 AND 88 APPLES RESPECTIVELY

the underlying principles of the diagonal pack there is no incentive to the use of the older and undesirable methods.

THE STANDARD PACKS

Below I have tabulated certain useful information on packs commonly used in British Columbia. Taken in connection with the Figures 9, 10, 11, 12 and 13, this table gives complete information on the make-up of the various packs.

An attempt to schedule the packs used by the different varieties failed, because of the great variation in all varieties in different districts on young and old trees, and variations in the practice of different packers.

We believe that specific information on different varieties is immaterial if this table and the Figures are given close study, especially in connection with the following instructions from Mr. James Gibb, one of our packing-school instructors, on the starting of the various packs.

2, 1 DIAGONAL PACK.—Apples must be too large to fit in three in straight line across the box. Start with two apples, one in each corner, then one between these, then two at sides, and so on.

Second Tier—Start with one in the centre of the end, over blank space, then two, and so on, covering the blank spaces.

The third tier comes directly over the first, covering the blank spaces in the

second tier. All 2, 1 packs go on the side.

The straight 3-tiers, 45 and 54, quoted in the table are rarely actually necessary. The 45's will usually go in 45, 2, 1 diagonal. The 54's go in the 56 diagonal, 2, 2.

2, 2 DIAGONAL PACK.—Apples must be large enough to fit in, four in straight line across the box. Start with two apples, one in left-hand corner and one half-way to right corner, both with stem towards packer. Then two more—one between first two and the other between the second apple and the right side of the box—both calyx towards the packer. Then two more, each in line with first and second apple, and so on, keeping each two in straight line across the box to ensure diagonal lines being straight. Finish tier with apples in same relative positions at far end as at near end, viz., farthestmost two, stem to end.

Second Tier—Start with two again, one in right-hand corner and one half-way to left corner, over blank spaces, stem to packer, and follow on with next two, calyx to packer.

Finish tier with farthestmost two covering the two blank spaces at far end of first tier, with stem to end of box again.

All open spaces between apples in lower tier are now covered by apples in second tier, so that the bottom of the box cannot be seen. The third tier follows directly above the apples of the first

No. of apples in box	Type of pack	Tier designation	Actual tiers	Position of apples	Apples in top of tier	Size of apples	Shape of apples
36..	Diagonal, 2, 1.3	tier..3..	Side	..2, 1—4,	4 equals	12.. Very large 3¾in. & up..	..Long
41..	Diagonal, 2, 1.3	tier..3..	Side	..2, 1—4,	5 equals	14.. Very large 3¾in. & up..	..Medium
45..	Diagonal, 2, 1.3	tier..3..	Side	..2, 1—5,	5 equals	15.. Very large 3¾in. & up..	..Flatter
45..	Straight ..3	tier..3..	Side	..3,	5 equals	15.. Very large 3¾in. & up..	..Large flat
54..	Straight ..3	tier..3..	Side	..3,	6 equals	18.. Large 3 2-3in.	..Long
56..	Diagonal, 2, 2.3½	tier..4..	End, usually	..2, 2—3,	4 equals	14.. Large 3½in.	..Long
64..	Diagonal, 2, 2.3½	tier..4..	End, usually	..2, 2—4,	4 equals	16.. Large 3¾in.	..Long
72..	Diagonal, 2, 2.3½	tier..4..	End, usually	..2, 2—4,	5 equals	18.. Large 3¾in.	..Medium
80..	Diagonal, 2, 2.3½	tier..4..	End, usually	..2, —5,	5 equals	20.. Large 3¾in.	..Medium
88..	Diagonal, 2, 2.3½	tier..4..	End, usually	..2, 2—5,	6 equals	22.. Large 3in.	..Medium & flat
96..	Diagonal, 2, 2.4	tier..4..	Side	..2, 2—6,	6 equals	24.. Medium to large	..Long
104..	Diagonal, 2, 2.4	tier..4..	Side	..2, 2—6,	7 equals	26.. Medium to large	..Long
112..	Diagonal, 2, 2.4	tier..4..	Side	..2, 2—7,	7 equals	28.. Medium to large	..Roundish to flat
120..	Diagonal, 2, 2.4	tier..4..	Side	..2, 2—7,	8 equals	30.. Medium to large	..Roundish to flat
128..	Diagonal, 2, 2.4	tier..4..	Side	..2, 2—8,	8 equals	32.. Medium to large	..Flat
113..	Diagonal, 2, 3.4	tier..5..	End	..2, 3—4,	5 equals	23.. Medium	..Medium
125..	Diagonal, 2, 3.4	tier..5..	End	..2, 3—5,	5 equals	25.. Medium	..Medium
138..	Diagonal, 2, 3.4½	tier..5..	End	..2, 3—5,	6 equals	28.. Medium	..Medium
150..	Diagonal, 2, 3.4½	tier..5..	End	..2, 3—6,	6 equals	30.. Medium	..Medium
163..	Diagonal, 2, 3.4½	tier..5..	End	..2, 3—6,	7 equals	33.. Medium to small	..Slightly flat
175..	Diagonal, 2, 3.4½	tier..5..	End	..2, 3—7,	7 equals	35.. Small	..Slightly flat
188..	Diagonal, 2, 3.5	tier..5..	End	..2, 3—7,	8 equals	38.. Small	..Medium
200..	Diagonal, 2, 3.5	tier..5..	End	..2, 3—8,	8 equals	40.. Very small	..Medium
213..	Diagonal, 2, 3.5	tier..5..	End	..2, 3—8,	9 equals	43.. Very small	..Medium
225..	Diagonal, 2, 3.5	tier..5..	End	..2, 3—9,	9 equals	45.. Too small	..Medium



FIG. X.—4-TIER DIAGONAL PACK, CONTAINING RESPECTIVELY 112, 104 AND 96 APPLES EACH. THE 2-2 PACK FROM 56 TO 88 SHOULD BE PACKED ON END AND FROM 96 TO 128 ON THE SIDE

tier; the fourth tier is directly above the second tier.

The proper bulge is secured when the ends are slightly above the level of the top of the box, with a gradual rise to centre from each end. An inch and a quarter to an inch and a half bulge at centre is correct. Cover should touch every apple in top tier, thus giving equal pressure on every apple in the box. This applies to every apple pack. To get bulge correctly, choose apples slightly larger, but not longer, for the centre of the box.

THE 2, 3 DIAGONAL PACK.—Apples that will fit in, four in straight line across the box, and not small enough to fit in five across, come in this pack. All packed on end, calyx up. Start with three apples, one in each corner, and one exactly half-way between them. Then two in next row, then three again, and so on, keeping each row of two and three in straight line across box to ensure a good alignment always. Work in the longer specimens towards centre of the box, and flat ones in ends, to give the bulge. This done in every tier brings the bulge without perceptible difference in the size of apples.

Second Tier—Start with two, covering the blank spaces left between the first three of first tier, then three and two, and so on.

Third Tier—Same position as first.

Fourth Tier—Same position as second.

Fifth Tier—Same position as first and third.

Long-shaped apples come high in this pack, to avoid which reverse alternate tiers—that is, put the second tier stem up, instead of calyx; third tier, calyx up; fourth tier, stem up; fifth tier, calyx up.

It is sometimes necessary to get the correct height to set centre layers slightly on a slope, lengthwise with box, which brings the pack lower.

MARKET GRADES OF BRITISH COLUMBIA APPLES

In common with their packing, the grading of British Columbia apples has been very much along the lines adopted by the neighboring states of Oregon and Washington. Years before this province was a big producer Washington apples were entering all of our principal coast and interior markets. The necessity for meeting this competition in British Columbia, and, later, in the prairie pro-

vinces, has necessitated the adoption of similar grades by our shippers.

Then, again, British Columbia, realizing the greater experience of the older districts under similar conditions, both of production and of marketing, has been willing to learn from them and adopt their methods.

The Dominion Fruit Marks Act has been another strong factor in developing our present standards. The great and good influence of this Act cannot be overestimated. Its moral influence, to a greater degree than its enforcement, has been of great service.

The influence of both these great general factors is modified in British Columbia by the local conditions of different districts. The high color, large size and clear skin of many varieties, as grown in the Dry Belt, have helped materially to create high standard there. The exceptionally good dessert and keeping qualities of the Kootenay district have been an inspiration there to the establishment of high dessert grades. In the Lower Mainland climatic conditions induce a much larger percentage of cull fruit, which, together with the facility afforded by large local markets for disposing of almost any grade of fruit, has tended to

the production of a lower grade. The same is true, to a lesser extent, on Vancouver Island. In these two latter districts the profitable development of the apple industry depends on the careful selection of varieties and high degree of care of the orchard, and the adoption of a much higher average standard of grading.

Local conditions are, therefore, creating divergent ideas of the values of the various grade marks.

In every district there are some independent shippers putting out grades falsely marked, in some instances unknowingly, but in others it seems that a perverted moral sense does not permit them to realize that false marketing is injurious, not only to their own reputation and prices, but to those of their district as well. On this account we reproduce herewith excerpts from the Inspection and Sales Act, embodying the Dominion Government regulations:

"321. No person shall sell, or offer, expose or have in his possession for sale, any fruit packed—

"(a) In a closed package and intended for sale, unless such package is marked as required by the provisions of this part;

"(b) In a closed package, upon which



FIG. XI.—4-TIER DIAGONAL PACK, CONTAINING 125, 120 AND 113 APPLES RESPECTIVELY. 113 AND 125 ABOVE REPLACE THE OLD 112 AND 128 4-TIER SQUARE PACK

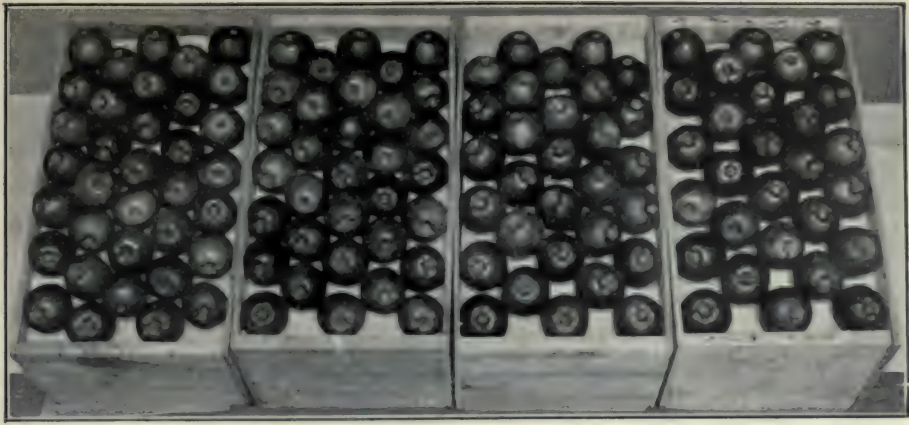


FIG. XII.— $\frac{1}{4}$ -TIER DIAGONAL PACK, CONTAINING 175, 163, 150 AND 138 APPLES RESPECTIVELY. THE 2-3 PACK, FIVE TIERS DEEP, TAKES MOST COMMERCIAL APPLES

package is marked any designation⁹ which represents such fruit as of—

“(i) Fancy quality, unless such fruit consists of well-grown specimens of one variety, sound, of uniform¹⁰ and of at least normal size and of good color for the variety, of normal shape, free from worm holes, bruises, scab and other defects, and properly packed;¹¹

“(ii) No. 1 quality, unless such fruit includes no culls¹² and consists of well-grown specimens of one variety, sound, of not less than medium size and of good color for the variety, of normal shape, and not less than ninety per cent. free from scab, worm holes, bruises and other defects, and properly packed;¹¹

“(iii) No. 2 quality, unless such fruit includes no culls¹² and consists of specimens of not less than nearly medium size for the variety, and not less than eighty per cent. free from worm holes and such other defects as cause material waste,¹³ and properly packed;¹¹

9. It will be noted that the definitions of grades Fancy No. 1 and No. 2 do not vary from year to year, nor do they vary in different provinces of the Dominion. If the quality of the fruit generally is poor, the only result is that a smaller proportion of the fruit is of the higher grades.

10. “Uniform” is to be taken as referring to the specimens in each individual package. Normal sized apples and very large apples, packed in the same package, would not be uniform.

11. “Slacks” and over-pressed packages are to be considered as not properly packed if the condition is likely to result in permanent damage during handling or transit.

12. Note definition of “culls” in Section 319.

13. “Defects as cause material waste” will include abnormal growths, bruises, immaturity and the effects of fungus diseases.

“(c) In any package in which the faced or shown surface gives a false representation of the contents of such package; and it shall be considered a false representation when more than fifteen per cent. of such fruit is substantially smaller in size than, or inferior in grade to, or different in variety from, the faced or shown surface of such package. I.-E. VII, c. 27, ss. 5 and 7; 6 E. VII, c. 15, s. 2; 7-8 E. VII, c. 35, s. 8.”

The Act defines culls as follows:

“(c) ‘Culls’ shall include fruit that is either very small for the variety, or immature, or the skin of which is broken so as to expose the tissue beneath, or that is so injured by insects, fungi, abnormal growths, or other causes, as to render it ‘unmerchantable.’”

While the Fruit Marks Act as quoted above apparently lays down hard and fast rules for the different grades, these are, therefore, varied by local conditions and customs.

The highest standards of grading adopted by any considerable body of shippers are probably those of the Okanagan Valley. They have interpreted the Fruit Marks Act so as to produce grades very similar to those adopted in Wenatchee, Washington. Their No. 1 grade is practically equivalent to the “Fancy” of the Wenatchee Valley; as far as possible, no defective fruit being shipped in the No. 1’s. Because of the absence of Codlin Moth and San Jose

Scale our Okanagan No. 2 corresponds very closely to and often surpasses in practice the third grade, or Grade C, of the Wenatchee.

The adoption of these grades means practically the elimination of the grade termed "Fancy" under the Dominion Fruit Marks Act. Under our present market conditions we think that this is wise. To strictly comply with the rules for "Fancy" grade lowers the standard of the balance too much, and higher price received for the "Fancy" grade does not counterbalance the loss on the Number 1's and the Number 2's.

In districts where conditions are such that growers do not feel it possible to attain to this high standard, we urge that they adopt the Fruit Marks Act grades to the letter, and do not fall below them, whatever the temptation.

For the benefit of fruit-growers who are putting up a pack for the first time, and who are somewhat in doubt as to the actual sizes of No. 1 and No. 2 under the Act, we give the following table. It will not meet with the approval of all districts, and is, generally speaking, slightly above the requirements of the Act as generally interpreted:

	Fancy & No. 1	No. 2
Yellow Transparent	150 per box	200 per box
Duchess of Oldenburg ..	138 " "	188 " "
Wealthy	150 " "	188 " "
Alexander	125 " "	163 " "

	Fancy & No. 1	No. 2
Gravenstein	138 per box	188 per box
Wolf River	125 " "	150 " "
Snow	175 " "	225 " "
McIntosh Red	150 " "	200 " "
Twenty-ounce Pippin ..	138 " "	175 " "
King	138 " "	175 " "
Rhode Island Greening ..	150 " "	200 " "
Jonathan	150 " "	188 " "
Cox's Orange Pippin ..	175 " "	225 " "
Sutton's Beauty	138 " "	175 " "
Pewaukee	125 " "	175 " "
Red Cheeked Pippin	138 " "	163 " "
Golden Russet	150 " "	200 " "
Spitzenberg	125 " "	163 " "
Bell Flower	125 " "	163 " "
Canada Red	150 " "	175 " "
Grimes Golden Pippin ..	138 " "	175 " "
Wagener	150 " "	188 " "
Baldwin	150 " "	200 " "
Northern Spy	150 " "	200 " "
Ontario	125 " "	175 " "
Roxbury Russet	138 " "	188 " "
Belle de Boskoop	150 " "	188 " "
Vandevere	138 " "	163 " "
Stark	138 " "	163 " "
Blue Pearmain	150 " "	200 " "
Salome	150 " "	200 " "
York Imperial	138 " "	163 " "
Ben Davis	150 " "	188 " "
Gano	138 " "	188 " "

THE MARKING OF BOX PACKAGES

The Fruit Marks Act requires the following marks on every box:

- (1) The name and address of the packer;
- (2) The kind of fruit;
- (3) Its grade—"Fancy," "No. 1," or "No. 2."

This is not, however, complete enough for the market requirements, and the grading and size of apples should be much more closely indicated. At the present time the fruit shippers of British Columbia, as a rule, content themselves

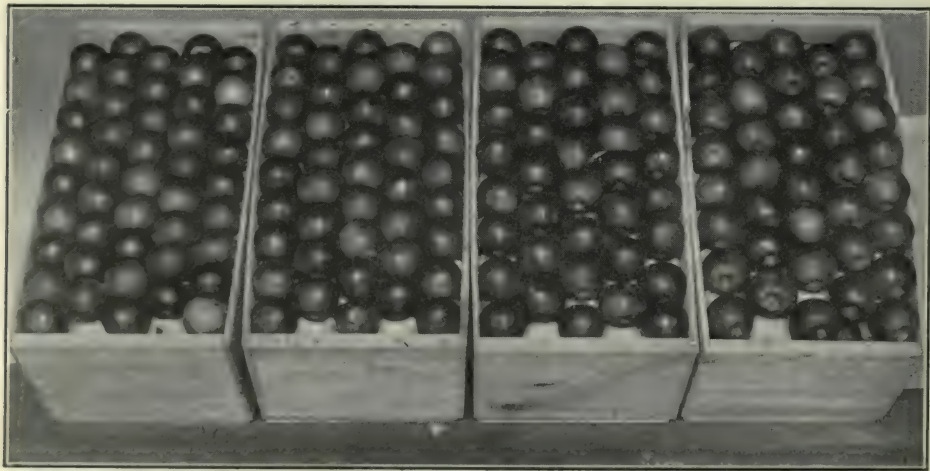


FIG. XIII.—5-TIER DIAGONAL PACK, CONTAINING RESPECTIVELY 225, 213, 188 AND 188 APPLES. ALL APPLES 188 OR MORE ARE STYLED 5-TIER. IT WILL BE NOTED THAT APPLES ACTUALLY 5-TIER MAY BE 4, 4½ OR 5. THE TIER SYSTEM IS OBSOLETE, THE NUMBER OF APPLES IN THE BOX BEING SIMPLE AND CERTAIN

with stamping on the box the number of tiers, that is—3 tier, $3\frac{1}{2}$, 4, $4\frac{1}{2}$ or 5 tier. Occasionally the light-colored apples are stamped "L." The packer's number is also stamped on the box.

We understand that this year some of our biggest shippers will adopt the practice of stamping on the end of the box the exact number of apples contained in it. This has a number of very important advantages—

1. The purchaser, whether jobber, retailer or consumer, prefers to have the number stamped, because he knows then exactly what size he is getting. If the apples are for the fruit-stand trade a glance tells him what price can be paid per box if they are to be sold at certain set prices by number. He sells by number, and wishes to buy in the same way. The consumer buying for dessert purposes, whether for his own use or for hotel use, also appreciates the information given by the number.

2. With the adoption of the diagonal packs the old description of apples by tiers is not now accurate. Under our present system some apples, such as 2-3, 5-5 (125) are marked "4 tier," while in reality there are 5 actual tiers of apples. The 2-3, 6-6 (150) is marked " $4\frac{1}{2}$ tier," but has 5 actual tiers. The 2-2, 8-8 (200) is marked "5 tiers," and it actually does have 5 tiers of apples. The same anomaly occurs all through. The designation of tiers must soon be discarded as obsolete. The use of the number cannot come too soon.

3. The designation by tiers is just as misleading to the grower as to the consumer. Only a technical expert knows how to interpret his packs in the terms of "tiers."

Our highest class shippers will, undoubtedly, take this up in the next two years. For the present it would be better, perhaps, to designate both tier and number. In Wenatchee the following is suggested:

Tier	Grade	Variety Number

The Dominion Government Bulletin recommends the following system:

Tier	Number	Grade Variety

Below is a box marked as is the custom in the Okanagan. This method, for the sake of uniformity, is on the whole to be commended. The packer's number is placed in the lower corner. Any brand may be used. Where the shipper's brand is given the law does not require that of the grower, though usually the grower's name or number is stamped on, so that the fruit can be identified in case of complaint:

Variety	Grade	Tier Number
	Brand	
Packer's Number		Grower's Number

Lack of space prevents anything more than the mere outline above of the main features in connection with the handling of the apple crop. We trust that the article will be of value to many new shippers putting up their crop for the first time.

THE ROWE CHERRY

WE have been favored with a sample of the Rowe cherry, which we consider a distinct advancement in the production of the cherry family. This cherry ripens fully six weeks later than the Lambert, Bing or Royal Anne, and is a very high-class sweet cherry.

We do not class it higher than the above three varieties, but the fact that it ripens so late in the season makes it exceptionally valuable in prolonging the season for this most delicious of tree fruits. It has a splendid flavor, and the firmness of the meat should make it a first-class shipping variety.

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

MANY questions of importance to the Dominion at large, as well as to the various provinces individually, are hung up for the mandate of the electorate at the coming general election. But to all Canada reciprocity or no reciprocity with the United States is the one great overwhelming issue. And that issue we are told involves our fruit interests proportionately more, perhaps, than any other. "The reciprocity agreement means enormously greater prosperity to fruit culture," says one side. "Wreck and ruin," says the other.

The party in power started the campaign with obvious definite advantages over the other side. The opposition had been kept guessing to the last moment, and while they were guessing the Liberals were pushing necessary preparatory work night and day for dissolution and appeal to the country. Sir Wilfrid's secret was very well kept. Up to the Saturday morning before dissolution the opposition were left to suppose the Cabinet would take no definite action until the following Wednesday at the earliest. But before noon that Saturday the news was suddenly given out that the decision to dissolve parliament would be officially proclaimed in the afternoon, and a few hours later the official "Gazette" confirmed the report.

The independent man about town at the capital seems indisposed just now to jump to over-hasty conclusions. He says, "If Sir Wilfrid is returned to power and reciprocity carried it will be soon enough in another six months or a year to begin figuring up what reciprocity is doing respectively for both Canada and the United States."

A United States consular report from London gives the average British imports of fresh fruit for the past five years at fifty million dollars. Britain's doors are wide open for all the good fruit Canada can spare.

Fruit prospects in the United Kingdom were not so satisfactory, according

to last month's reports to the British National Fruit-growers' Association, as they had been the previous month. Blight had caused considerable trouble with apples; and under the most favorable circumstances the crop of keeping apples would be but moderately fair. The Weald of Kent was not producing as many apples as last year. Evesham and West Kent conditions were not good. Generally speaking attacks of aphid had affected all kinds of fruit, and the products of the leading fruit districts would be "much shorter than had been anticipated." The shortage that is now certain in leading lines of fruit in Great Britain and Ireland must tend to stiffen prices for such descriptions as Canada may be in a position to spare after supplying her domestic wants.

Of all the fruits which are the subject of international trade apples represent the greatest aggregate value. The following table shows that 44.5 per cent. of the apples imported to the United Kingdom in 1910 came from British possessions:

From Canada, 1909, 1,635,855 cwt., value £960,156; 1910, 1,106,510 cwt., value £651,292. Australia, 1909, 248,455 cwt., value £251,761; 1910, 323,725 cwt., value £332,748. Other British possessions, 1909, 13,993 cwt., value £7,626; 1910, 12,738 cwt., value £7,277. Total British possessions, 1909, 1,898,303 cwt., value £1,219,543; 1910, 1,442,973 cwt., value £991,317. Foreign countries, 1909, 1,231,343 cwt., value £788,368; 1910, 1,799,232 cwt., value £1,197,992. Total, 1909, 3,129,646 cwt., value £2,007,911; 1910, 3,242,205 cwt., value £2,189,309.

It is seen that Canada supplies the British Isles with by far the largest quantity of apples, and in 1910-11 the United Kingdom took 476,200 barrels, value \$1,598,359, out of a total Canadian export of green or ripe apples of 523,788 barrels, of the value of \$1,757,753. During the last six years the value of the exports of fresh fruit from the Commonwealth of Australia has averaged over

£195,000 per annum, apples forming the chief item. In 1910 the value of the exports of apples from the Commonwealth was £266,118, compared with £179,976 in 1909. That the fruit-growing industry in Australia is susceptible of considerable extension is evidenced by the fact that there is still a fairly large import of both fresh fruit and dried fruit. A steady expansion of the fruit-growing industry is taking place in Tasmania, and the crop of 1909-10 was the largest on record, the estimated total yield of fruit, mainly apples, being over 2,000,000 bushels, worth between £500,000 and £600,000.

Great Britain's imports of pears, peaches, apricots and grapes from British possessions the past two years were: Pears—Cape of Good Hope, 1909, 4,421 cwt., value £18,184; 1910, 6,788 cwt., value £22,215. Australia, 1909, 13,484 cwt., value £15,043; 1910, 18,480 cwt., value £20,647. Canada, 1909, 4,913 cwt., value £5,026; 1910, 8,797 cwt., value £8,263. Apricots and peaches—Cape of Good Hope, 1,175 cwt., value £8,873; 1910, 1,808 cwt., value £11,275. Grapes—Cape of Good Hope, 1909, 4,235 cwt., value £18,697; 1910, 4,832 cwt., value £21,184.

Fruit culture in South Africa is yearly becoming more important and remunerative, and every effort is being made by the government to foster the industry. British buyers are already familiar with peaches, plums and pines from the Cape and Natal. About half the orchard area of the Cape province is under vines, and experiments are being conducted with a view to shipping grapes, of which 32,323 boxes reached Great Britain in 1909. Efforts are being made to extend the proportions of Natal's export fruit trade with the United Kingdom.

The following table showing the principal imports of fruit to the United Kingdom from the British West Indies for 1910 may interest many Canadian fruit-growers and shippers who study the effects on Canadian exports to the British markets of fruit products not grown in Canada: Bananas, 868,741 bunches, value £162,841; oranges, 128,544 cwt., value £83,293; lemons, limes and citrons, 1,991 cwt., value £1,548; lime and lemon

juice, 546,796 gals., value £67,013; other fruit juice, raw, 10,072 gals., value £8,837. The fruit industry of Jamaica is of increasing importance, and the exports of fruit in 1909 comprised 59 per cent. of the total export trade of the island. Bananas were exported to the value of £1,403,830; oranges, £31,950, and grape fruit, £16,145. The value of fruit, mostly bananas, exported from Trinidad in 1909-10 was £20,836. Pine-apples, oranges and grape fruit are exported from the Bahamas to the American market. There was a small export of oranges last year from Natal to the London market. Lime juice is the chief product of Dominica and Montserrat. The cultivation of limes is extending in Antigua, Nevis, St. Kitts and the Virgin Islands. There is a small export of bananas and other fresh fruit from Fiji to Australia and New Zealand, which amounted in value to £98,491 in 1909.

The following table shows the imports of fruit, canned and bottled, to the United Kingdom from British possessions in 1909 and 1910: From Straits Settlements, 1909, 191,095 cwt., value £181,469; 1910, 147,880 cwt., value £181,573. Australia, 1909, 3,455 cwt., value £4,160; 1910, 1,970 cwt., value £2,587. Canada, 1909, 24,080 cwt., value £21,054; 1910, 30,068 cwt., value £28,374. Other British possessions, 1909, 275 cwt., value £485; 1910, 302 cwt., value £515. Total from British possessions, 1909, 218,905 cwt., value £207,168; 1910, 180,220 cwt., value £213,049. Foreign countries, 1909, 450,544 cwt., value £589,987; 1910, 434,323 cwt., value £554,804. Total, 1909, 669,449 cwt., value £797,155; 1910, 614,543 cwt., value £767,853. There has been a marked decrease in pineapple cultivation in Singapore during the last year or two, coinciding with the increase of Para rubber planting.

The following table shows the imports of honey to the United Kingdom in 1909 and 1910: From West Indies, 1909, 18,503 cwt., value £20,550; 1910, 14,160 cwt., value £19,775; other British possessions, 1909, 1,327 cwt., value £1,973; 1910, 1,644 cwt., value £2,592. Total British possessions, 1909, 19,830 cwt., value £22,523; 1910, 15,804 cwt., value

£22,367. Foreign countries, 1909, 12,787 cwt., value £19,750; 1910, 16,228 cwt., value £23,477. Total, 1909, 32,617 cwt., value £42,273; 1910, 32,032 cwt., value £45,844. The outlook for beekeeping in the West Indies is a very promising one, and in Jamaica the industry is of considerable value. Jamaica "extracted honey" has a high reputation on European markets. At the present price of honey in Europe the consumption is limited, but it is believed that with modern methods honey might be produced and sold at lower rates and that a largely increased consumption would follow. There is also an excellent demand for beeswax, a valuable by-product of beekeeping, for which high prices are realized. The value of the exports of honey from Jamaica in 1909 was £19,281. The exports of honey from the Commonwealth of Australia in 1910 were valued at £2,433, as against £2,675 in 1909.

Raisins, currants, figs, plums, etc., were imported to the United Kingdom in 1909 to the value of £2,829,553, and in 1910 to the value of £3,251,056, but only £14,091 in 1909 and £16,338 in 1910 represented imports from British possessions. Raisins were imported from Australia in 1909 to the value of £8,838 and in 1910 to the value of £367. Dried raisins and currants are produced in large quantities in Victoria and South Australia. The exports of raisins and other dried fruits from the Commonwealth of Australia in 1910 amounted in value to £12,040, as against £11,826 in 1909.

Readers of *The Fruit Magazine* may be surprised to learn that bananas are reported to have been sold last month in Ottawa at 25 cents a bunch. They were retailed from street wagons the same day and following days at 25 cents for two dozen, at which price I bought two dozen. The fruit seemed to be in perfect condition, exactly fit for eating, with clear bright yellow skin, few traces of over-ripeness, of firm flesh and right flavor. But the next day, although the unused bananas had been kept overnight in the refrigerator, they had already badly deteriorated, and by evening they were for the most part unfit for food. It was at the height of the berry season, bananas were a drug in the market, and every-

body preferred our own juicy native fruits—raspberries, blueberries, gooseberries and so on—at fair prices, to foreign fruit at any price.

Mention of the fruits of southern latitudes reminds me that reports of a big combine in the Central American West India Islands fruit trade are received from Havana, Cuba. The combine is to begin operations with a capital of twelve million dollars. Ten Cuban companies are said to be in the deal, and the combine is to compete with the practical monopoly this side of the Atlantic of the United Fruit Company. The chief object of the combine is the exploitation of the banana trade in Central America and the West India Islands.

Mr. J. A. Ruddick, the Dominion Dairy and Cold Storage Commissioner, is leaving shortly on a long and important official trip to the West in connection with cold storage applications; namely, from Fort William, Port Arthur, Brandon, Calgary, Prince Rupert and the Queen Charlotte Islands. In the last named case the cold storage is required for the fisheries interests.

Mr. Ruddick has appointed a new fruit inspector for the Saskatoon district, Mr. W. J. Varley, who has had a long and varied and most suitable experience in fruit culture in the province of Ontario.

Mr. W. H. Bunting, of St. Catharines, Ont., who has been appointed to conduct an exhaustive enquiry into the conditions, prospects and requirements of the fruit and allied industries of Canada, is to visit all the leading fruit-growing sections of the Dominion, and embody the result of his investigations in an official report, with recommendations relating to the best methods of promoting the interests of the industry. Mr. Bunting's appointment to this very important mission aroused some opposition at first on the part of some thick-and-thin supporters of the reciprocity policy of the government, he having fearlessly and strongly opposed the adoption of the reciprocity agreement. It is, however, frankly recognized everywhere in Canada among the authorities on fruit questions that Mr. Bunting is the ablest man in the Dominion for the important and delicate work with which he has been entrusted. The

appointment of Mr. Bunting is to carry out the work to which editorial reference was made in the last issue of *The Fruit Magazine*, and in which Mr. Ruddick's name alone was mentioned through the inaccuracy of the first dispatch sent West on the subject.

Mr. W. A. Beddoe, Canadian Trade Commissioner at Auckland, N. Z., writes: "British Columbia apples sell here during October and to the end of December. None should arrive later, as local fruit will then be coming in. Apples should be medium sized, highly colored—very large or very small apples will not bring

as high a price. Fruit preferred with firm flesh, crisp, not mealy. The duty on apples is 1d per pound while local fruit lasts, but from July 14 to December 31 the duty is reduced to ½d per pound to encourage the importation of outside fruit. Fruit has to be inspected by the Agricultural Department, and, if found with codlin moth, etc., may be ordered to be destroyed, to the loss of the shipper. Fruit must come in cool storage, not frozen. The price realized usually is 10s to 12s 6d per case, but in times of scarcity it reaches 15s. This, however, should not be reckoned upon."

Fruit Preserving Recipes

Contributed to *The Fruit Magazine* by Mr. HARRY BEACH

APPLE JELLY

TAKE the required amount of apples and wash them thoroughly in warm water. Cut them roughly up into portions—do not remove skin, core or seeds. Put all into a bright brass jelly pan or deep graniteware pot; do not put more water than will just come to the top of the pieces of apples. Set the pan on the fire or stove and bring to boiling point, boil until the apples are somewhat reduced to a pulp, stirring occasionally with a silver or wooden spoon. Strain by putting this mixture into a flannel bag and allowing the juice to run into a basin. It is good to get this part done in the evening before you wish the jelly made, as the bag can very well stand over the night. Do not use any pressure while the juice is dropping away or the jelly will be muddy. The juice ought to be of the consistency of thin cream when it becomes cold. The jelly pan must be thoroughly cleaned before it is again used for the next process. Measure the juice carefully with a small breakfast cup and return it to the jelly pan. Bring to boiling point and for every two breakfast cupfuls of juice add one pound of good granulated sugar, previously warmed in the oven or in front

of a fire. Stir until the sugar melts and boil rapidly for a quarter of an hour. Put a tablespoonful of the jelly in a saucer and set it in a cool place for a few seconds; if there is an appearance of the surface firming, the jelly is ready. Remember there is no hard and fast rule for the time required for boiling. Remove the froth from the top and pour into perfectly dry pots. Cover when cold.

CRAB APPLE JELLY

This is made in exactly the same way as apple jelly, using, perhaps, a little more sugar, according to the tartness of the apples.

APRICOTS PRESERVED

Select ripe but sound apricots, peel, halve and remove stones. Make a syrup of one pound of sugar to a pint of water and bring to boil. Put the fruit carefully in the syrup, use a silver or wooden spoon, dip the syrup from one side of the pan and pour it over the fruit. Next simmer for about twenty minutes, continuing to pour the syrup over the fruit—do not allow to mash. After this take each half apricot with a teaspoon and place them carefully in the sealer jars and when full pour over them the syrup remaining in the pan. Top quickly and

store in a cool, dry place. Care must be taken in filling the jars to prevent breakage. This is best done by immersing the jars in hot water before using.

PRESERVED PEACHES

These are done in exactly the same way as apricots. Those grown in the Okanagan are best suited—they contain more flavor and give best results.

APRICOT JAM

Take ripe apricots and to every pound of fruit after it is stoned allow three-quarters of a pound of best granulated sugar. Take the skins from the fruit and cut them in half. Remove the stones, crack a few and take out the kernels, removing the brown shell; add these to the fruit which should then be placed in the preserving pan, adding enough water to nearly cover them and boil until all the fruit is soft. Add sugar and boil until a little put into a saucer firms. Cover with brandied waxpaper or paraffin wax. Store in a dry place.

PLUM JAM

Take ripe plums—the sourest varieties are best—and remove some of the stones, and to every pound of fruit allow one pound of best granulated sugar. Put fruit into the preserving pan and cover with water and boil until mashed. Next put the sugar in, warmed in the oven be-

forehand. Cook until a little placed in a cold saucer or plate firms—time taken should be about half hour. Put in jars and cover with brandied waxpaper or paraffin wax.

To keep fruit whole in the sealer jar is what every housewife likes to do. The only way to do this is to cook all fruits right in the bottle. If this is done carefully one need not fear breakages.

How it is done—First, fill the jars with any kind of fruit (tightly packing all stone fruits), pour over them a syrup, usually one pound of sugar to a pint of water is sweet enough. Cover with lid and screw down loosely. Next put the jars in a good size boiling pot or wash basin, boil and fill with cold water, standing the jars on a piece of wood placed in the bottom. In fifteen minutes bring the water up to about 90 degrees (one can usually bear a finger in the water at this heat), allow the water to get slightly warmer for the next fifteen minutes, but not too hot or breakage will result. Now gradually heat up to boiling point and boil for thirty minutes. Remove jars from pan any time after this. Usually one finds them too hot to handle for some time. Screw cap down tightly after boiling. The jars must be placed in a place free from cold draughts for the first hour and then be stored away.

Prairie Market Reports

MR. J. C. METCALFE, the Markets Commissioner for British Columbia, reports as follows:

Calgary, July 31.—Plunkett & Savage and the McPherson Fruit Co., jobbers here, report a number of carloads arrived of mixed vegetables from Armstrong and Kelowna, B. C. All very good stock. Sweet cherries are about over, a few coming in from Kootenay points. Sour cherries in good demand, selling \$3 per case.

Edmonton is the only point I am aware of that received any quantity of sweet

cherries from British Columbia, and those came mainly to one jobber from the Kootenay district. Sweet cherries there sold as low as \$1 and less for 10 lb. boxes. Apparently it was want of proper distribution, as other points were bare and had not a sufficient supply, as shown in my former reports. British Columbia raspberries today selling \$2.65 per case. A few blackberries came in this morning from British Columbia; sold at \$3 per case. No more American raspberries came in during the past week, although jobbers state they could

have sold two more carloads, the demand being so good lately. The following quotations, f.o.b. point of shipment from American points, were shown me by jobbers today:

American Cherries, Blk., Reput., 10 lb. box	\$0.85
California Plums, as per variety	\$1.00 and 1.25
California Peaches, Crawford, per box ..	.85
California Pears, Bartlett, per box ...	1.75
California Tomatoes, 20 lb. box .....	.55
Washington Pears, per box, Wenatchee ..	1.75
Washington Wenatchee Apples, per box ..	1.25

Another quotation, or, rather, invoice on a carload of mixed fruits purchased by a jobber here was shown me, from which I made the following quotations, f.o.b. point of shipment, Wenatchee:

Plums, per case	\$0.75
Apricots, per case .....	.75
Peaches, per case (Triumph) .....	.60
Apples, half-box .....	.60
Apples, full size .....	.90

Varieties: Duchess, Transparent and Astrachan.

I also saw a quotation with same jobber of California tomatoes, f.o.b., point of shipment Sacramento, as follows:

Tomatoes, 2-layer box	\$0.30
Tomatoes, 3-layer box .....	.35

Regina, August 2.—The Vernon Fruit Company here reports supply of raspberries from British Columbia falling off, but arriving in good condition; further report a few blackberries coming in from British Columbia, selling at \$3. Raspberries the same price. Further report a short supply of all varieties of fruit at present. Another jobber reports buying peaches, Washington at 70c per case.

Another quotation I saw at this point from North Yakima of July 31 to jobbers here was as follows:

Peaches, per box	\$0.85
Plums, per box .....	.75
Sugar Pears, 4-basket case .....	.75
Bartlett Pears, full-size box	1.50
Tomatoes, per box .....	.75
Apples, half-box .....	.75
Apples, full-size	1.50

Another quotation from same point was as follows:

Pears, per box	\$1.50
Italian Prunes .....	.75
Peaches, per box .....	.75

Pears ready to ship about 5th of August. Prunes ready to ship about 10th to 15th of August.

The same party writing makes the following comments on fruit crop this season:

Prunes	About 70 per cent. of a crop
Peaches	" 25 " " "
Pears	" 90 " " "
Apples	" 35 " " "

We expect to realize good prices for all varieties of fruit this year, but not exceptionally high.

Stockton & Mallison, jobbers here, received a car of apples yesterday bought through Winnipeg, Illinois, Michigan-grown fruit. Stated they were No. 3; varieties Duchess, Transparent, Benoni and Astrachan. Barrels selling \$6.50 to \$7; boxes, \$3 to \$3.50. They are also receiving sour cherries from Kelowna, B. C. Nice stock, arriving in excellent condition; selling, 1 case at \$3; 5-case lots, \$2.75. I also saw some fine sweet cherries in a retail store here, and also some in the British Columbia exhibit from Mrs. Carr, of Haney, B. C. Arrived in splendid condition. Will sell, no doubt, at good prices, as sweet cherries are practically over.

Jobbers' prices to retailers this date, August 3:

Washington Apricots, per case	\$1.75
California Plums, per case	2.25
California Peaches	1.75
California Pears, per case	4.25
Apples, per barrel	7.00
Gooseberries, per lb. ....	.15
Currants, per lb. ....	.15
Raspberries, as per quality, \$2.75 to 3.00	

Moose Jaw, August 3.—Manager Rex Fruit Co. here reports fruit trade as quiet. Received a car of Chicago apples on the 1st from the Carson Fruit Co., Chicago, selling \$7.50 to \$8 per barrel; varieties Benoni and Duchess, No. 2 grade; only fair stock, under size. Showed me a quotation of Perry, of Yakima, quoting pears \$1.50 per case, ready about 10th to ship. A report to jobbers here, August 2, from Minneapolis, by distributors there stated sale of fruit as slow. California peaches selling by auction \$1 per case; three carloads sold at that date, but distributors holding back wanting more money; not offering. The following are jobbers' prices to retailers here:

Washington Apricots, per case, per variety	\$1.65 to \$2.00
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Washington Peaches, per case, per variety	\$1.65 to 1.90
Washington Plums, per case, per variety	1.75
California Plums, per case	2.00
California Pears, per case	4.25
Ontario Tomatoes, per basket	2.00
Chicago Apples, per barrel	8.00
B. C. Sour Cherries, 4-basket case ..	3.00
B. C. Red Currants	3.00

Washington sour cherries, 4-basket case, \$3; cost the same as British Columbia, laid down purchasers' point. Jobbers report sale of vegetables as slow; large quantities of local-grown on the market.

Medicine Hat, August 3.—Raspberries still coming in from British Columbia, but in lessened quantities, arriving in good condition. Brisk demand at increased price. A few blackberries coming; nice stock; arrived in good shape. Also apples from Armstrong; variety, Transparent No. 2; grade, clean, but somewhat under size; market bare, therefore in good demand.

Quotations to jobbers here from Washington are as follows:

Plums, per case	\$0.90
Peaches, per case .....	.75
Apricots, per case .....	.75
Apples, per case	1.50
Pears, per case	1.60

Jobbers report here buying heavily in British Columbia of apples, crabs and pears; is one of the American chain of houses. Also reports sale of vegetables slow and prices dropping, owing to the increased supply of local-grown vegetables being offered.

There arrived by express at Medicine Hat for week ending August 5, from British Columbia, the following:

Raspberries	428 cases
Cherries	141 "
Currants	9 "
Blackberries	8 "
Apples	8 "
Strawberries	10 "

604 cases

Correspondent at Saskatoon under date August 4 reports as follows: "Deciduous fruits moving slowly. Illinois apples, per barrel, selling \$7.50; Washington and California peaches, \$1.90; plums, \$2.25; apricots, \$1.90; pears, \$4.50. Supplies light, anticipated arrivals light."

Correspondent from Edmonton, under

date July 31, gives jobbers' prices as follows: "California pears, per case, \$4.50; peaches, \$2; California plums, \$2.35; Washington plums, \$2; apples, \$3.50."

Another correspondent, same point, reports, August 3: "Supplies of all varieties of deciduous fruits light; small fruits nearly over; sour cherries coming in, selling \$3 per case. Vegetable market slow; local-grown are depressing prices. Arrival of larger quantities of British Columbia and Washington fruit are looked for soon."

Calgary, August 7.—The following are jobbers' prices to retailers, August 5:

Raspberries	\$ 2.75
Black Currants, 4-5	4.85
Peaches, different varieties, \$1.25 to ..	1.75
Plums, Tragedy	2.10
Plums, R.D.	1.90
Plums, assorted varieties	1.85
Blackberries	3.00
Apples, California, Grav.	3.50
California Pears, Bartlett	4.25
Blueberries, B. C., per lb. ....	.15
Tomatoes, B. C., 30 lb. case	2.40
Tomatoes, California, 4-basket	2.50
Tomatoes, hothouse, local, per lb. ....	.22
Cucumbers, per doz.	1.25
Potatoes, B. C., per ton	45.00
Potatoes, Alberta	45.00
Celery, Sauchern, per lb. ....	.12½
Celery, B. C., per lb. ....	.11
Cantaloupes, Calif, 34's	5.75

There arrived at Calgary by express for week ending July 29, from British Columbia, the following:

Strawberries	148 cases
Raspberries	1319 "
Gooseberries	9 "
Blackberries	64 "
Currants	120 "
Cherries	3 "

Total1663 cases

Prices have ruled higher for raspberries the past week, as intimated in last report. Supplies of British Columbia fruit of all kinds are very light at present. Jobbers and retailers are looking for an increased supply shortly. Peaches seem to be the only fruit with a downward tendency as to price, but jobbers are not looking for price to rule very low. Prices quoted in Calgary quotations for peaches by jobbing house of \$1.25 per case was for a job lot offered, the fruit having been shipped to another point by mistake and then returned here

and offered low to move quickly and to save loss of fruit.

I met the past week a Mr. F. N. Chute, manager of the Waterville Fruit Co., Ltd., Waterville, N. S., also representing the United Co-operated Fruit Companies of the Annapolis Valley, N. S. He stated as follows:

They had about 40 associations in the co-operative companies, with a membership of over 1,000, and controlled an output of 400,000 barrels, comprising varieties Gravenstein, 50,000 barrels; Kings, 50,000; Golden Russet, 50,000; and a number of winter varieties covering the balance. They have decided to place their pack of Gravensteins on the Western markets under the Blue Nose brand; have sold 50 carloads to Maycock & Toms, Winnipeg, 75 per cent. No. 1, 25 per cent. No. 2, and give them control of the provinces of Manitoba and Saskatchewan. Their freight rate to Winnipeg is 81c per cwt. Their first shipment will be a whole trainload of 30 cars in October. Mr. Chute went west with the idea of selling to someone either at Calgary or some other point, giving them control of the province of Alberta. He stated also it was their intention of putting on the Winnipeg market this fall and winter a low grade of apples, No. 3, with the intention of selling to the foreign element there, who, he claims, demand a cheaper product. He states they have a good crop of apples this season, and will ship to the Old Country, having a rate of 62c per barrel to Liverpool; but, as I stated previously, jobbers are not looking for low prices this season, and are placing orders now at good figures for different varieties of fruit wanted for their trade.

Calgary, August 8.—The Vernon Fruit Co. here received today about 80 cases of raspberries and 25 cases of blackberries. All arrived in good condition, the raspberries selling at \$2.75 per case, blackberries the same.

The McPherson Fruit Co. here have another car of Washington mixed fruits due to arrive this week, cost f.o.b. point of shipment as follows:

Plums, per case	\$0.75
Apricots, per case .....	.75
Peaches, per case, Triumph .....	.60
Apples, half-box .....	.60

Apples, full-size box90
Varieties: Duchess, Astrachan and Transparent.

F. N. Chute, manager of the Waterville, N. S., Co-operative Association, has been here selling Gravenstein apples and trying to arrange for the sale of their fruit products to one party, giving them control of the province of Alberta, selling at \$2.50 per barrel, f.o.b. point of shipment. Freight rate of Calgary from Waterville, N. S., \$1.24; from Halifax, \$1.19.

Plunkett & Savage, jobbers here, report having bought 4,000 cases of Washington Italian prunes for future delivery. The McPherson Fruit Co. here also report having bought Italian prunes, Washington, for later delivery, at 40c per case in peach boxes. The following are costs of vegetables and fruits to a jobber here, f.o.b. point of shipment this date, August 8:

California Tomatoes, per case	\$ 0.57½
Washington Tomatoes, per case ..	.75
B. C. Tomatoes, per case	1.00
B. C. Carrots and Beets, per ton	\$35 to 36.00
B. C. Turnips, per ton	26.00
B. C. Potatoes, per ton	35.00
B. C. Apples, per box	1.50
California Plums, per box	1.25
California Peaches, per box .....	.75
California Grapes, per box .....	.75
California Pears, per box	1.75
California Apples, per box	\$1.50 to 2.00
Washington Apples, per box	1.15
Washington Peaches .....	.50
Washington Apricots .....	.75
Washington Plums .....	.70

There has been a general shortage of all fruits among jobbers here, but some have been able to keep up stocks fairly well.

Most fruits to date, namely apples, pears, peaches, plums and apricots, have been coming from California, with barrel apples from Iowa, but Washington fruits will now practically fill the market.

Macleod, August 10.—Express agent here reports very little small fruits coming in at present. Raspberries about over; blackberries in very limited quantities. Some few coming to retailers from Creston, B. C., and also from H. J. Shinn & Co., Spokane. The following are jobbers' prices to retailers here this date:

California Peaches, per box	\$1.70
Washington Peaches, per box	1.50
California Plums, per box	1.90
California Apricots, per box	1.50
California Apples, per box	3.40
California Pears, per box	3.90
California Cantaloupes, 45's	5.25

Retailers here report local-grown vegetables now supplying the market. The following are H. J. Shinn & Co.'s quotations of July 31 to retailers here, and although of not a very late date, may serve to make comparison as to prices:

Fancy Washington Raspberries, per case	\$2.50
Fancy Washington Loganberries, per case	2.50
Fancy Washington Dewberries, per case	2.50
Royal Ann Cherries, 10 lb. box	1.25
Black Cherries, 10 lb. box	1.25
Sour Cherries, 10 lb. box	1.25
Washington Apricots, per crate	1.25
Washington Plums	1.25
Washington Peaches, per box	1.80c to 1.00

Five cents off in 5-case assorted lots; 10 cents off in 10-case assorted lots; and special prices on large lots.

FARM AND GARDEN PRODUCE

Turnips, per cwt.	\$1.50
Beets, per cwt.	1.50
Carrots, per cwt.	2.00
California New Vegetables—	
New Peas, per lb. ....	.06
New Cabbage, per cwt.	2.50
Washington Green Onions, 1 doz. bunches .....	.20
Washington Radishes, 1 doz. bunches ..	.30
Washington Wax Beans, per lb. ....	.08
California Cantaloupes, 45's to 54's ..	4.00
California Tomatoes, 3-tier tomatoes, per box	1.50
California Tomatoes, in 3-box lots ..	1.40
California Tomatoes, in 5-box lots ..	1.35
Washington Tomatoes, 2-tier box	1.25
California New Potatoes, per cwt.	2.00
California Red Onions, per cwt.	2.00
California Onions, 3-sack lots	1.90
Hothouse Cucumbers, per doz.	1.00
Washington Cucumbers, per box	1.25

Lethbridge, August 11.—McPherson Fruit Co. here report buying four carloads of Wenatchee mixed fruits, all due to arrive within the next two weeks. They also report buying Italian prunes 55c per case for later delivery; are paying at present, California plums, \$1; peaches, 80c and 90c; pears, California, Bartlett, \$1.75; apples, \$1.75; Washington crabs, Transcendent, half-box, 75c; peaches, 60c; apples, half-box, 75c; variety, Red June, grade No. 2.

H. J. Shinn & Co., Spokane, are

bringing in a car of mixed fruits next week, the car being sold through the Good Co. here, who act as agents for them in this town. The American raspberries are selling at \$2.30 per case to retailers here, f.o.b. point of shipment; blackberries the same, a larger basket than our 2-5, about 3-5; sour cherries, \$1.25 per 10 lb. box. Local-grown vegetables are filling or supplying markets here now. Prices for peaches reported as ruling higher, and other varieties of fruit ruling firm. No one looking for low prices this season. Of course, along this line no one can compete so successfully as the growers and shippers in the Kootenay districts against the American competition to be met here, and we urge upon them the necessity of increasing their output of both large and small fruit as quickly as possible. The following are the jobbers' prices to retailers here:

California Apples, Astrachan, per box	\$2.75 to \$3.10
California Apples, Gravenstein, per box	3.00
Washington Apples, per box	2.75
California Pears	\$4.10 to 4.25
California Prunes, Tragedy	2.00
California Plums, per box	1.90
Washington Plums, per box	1.60
Washington Apricots, per box	1.50
Washington Peaches, per box	1.40
California Peaches, Crawford, per box ..	1.85
California Cantaloupes, large, per box ..	5.50
Cherries, 4-basket crate, preserving, per box	2.75

Calgary, August 14.—The Vernon Fruit Co. report fewer raspberries arriving, and blackberries in increasing quantities, but in no case able to meet the demand, selling \$2.75 per case. Washington fruits will be arriving in greater quantities from this on. There arrived at Calgary by express from British Columbia, for week ending August 5, the following:

Strawberries	2 cases
Raspberries	660 "
Currants	28 "
Gooseberries	6 "
Cherries	29 "
Blackberries	67 "

The following are jobbers' prices to retailers here:

California Plums and Prunes, per case	\$ 2.00
Washington Peaches, varieties Hales Early and Triumph	1.00

California Peaches, Crawford	1.50
Black Currants, 24—4-5's	5.00
Gooseberries, 4-5	3.75
Apples, barrels	7.25
Raspberries, 2-5	2.75
Blackberries, 2-5	2.75
Potatoes, B. C., per ton	45.00
Cherries, preserving, 4-5	4.75
California Pears, per box	4.25
Onions, per lb. ....	.05
Tomatoes, 4-basket crate	1.75
Celery, per lb. ....	.10½
Apples, per box	3.50
Carrots, per lb. ....	.03
Beets, per lb. ....	.03
Turnips, per lb. ....	.02½
Cantaloupes, 36's	5.75
Blueberries, per lb. ....	.15
Beans, green, per lb. ....	.12
Cabbage, per lb. ....	.03½
Crab Apples, half-box	1.50

Correspondent, Edmonton, August 10, reports as follows: "Current prices same as last week. McPherson Fruit Co. here have not had a car of Washington fruit yet. Everything to date almost all California, and prices are considerably higher than Washington. California peaches cost \$1.75 here; plums, \$1.85; pears, \$3.15; apples, \$2.90. At this date Washington peaches, however, would cost us \$1.10 here. Washington plums were not obtainable this week, and will not be in here for a few days longer. Apples also are away up there, and would cost us \$2.35 landed here. Some Washington stuff will arrive next week, when we will be able to give you a better idea of current prices."

Correspondent, Regina, reports under date August 12, as follows: "Business generally quiet; small or mixed fruits moving slowly; Washington fruits, slow in ripening, coming forward, but bringing stiff prices. California peaches selling to retailer \$1.65; plums, \$2.25; pears, \$3.75. Ontario plums and apples coming forward now at reasonable prices. Ontario tomatoes selling 30c f.o.b. there, Ontario. Prices for all varieties of fruit very firm."

The general consensus of opinion among jobbers and retailers is that all varieties of fruit will continue to rule reasonably high throughout the season. Prices for peaches are quoted higher at the present time, and it will be advisable for British Columbia growers and

shippers to hold firm to reasonably high prices from present indications and reports.

Wetaskewin, August 18.—Retailers here report raspberries and what few blackberries have come in as arriving in excellent condition. This point has a new jobbing house, doing business under the name of the Stoddart Fruit Co. The manager stated they had a car of California mixed fruit in today, but not much of anything else. This is also a good distributing point, the C. P. R. having a line running through to Winnipeg via Saskatoon. There are a number of good towns on it between this point and Saskatoon—Camrose, Bawlf, Daysland and others, carloads being distributed from Saskatoon on the east and Wetaskewin on the west.

Red Deer, August 19.—Retailers here all report a shortage of all varieties of fruit throughout the season. Strawberries and raspberries not 50 per cent of the demand, and no blackberries to mention as yet have arrived at this point. California fruits are almost altogether in evidence, but Washington and British Columbia fruits are expected in shortly. Carloads of mixed fruits and straight cars of apples are handled later in the season at this point.

The following are jobbers' prices to retailers here:

Crabs, per box	\$2.25
Plums, per box	1.75
Pears, per box	3.50
Peaches, per box	\$1.30 to 1.50
Apples, per box	2.75
Tomatoes, per box	1.50
Cherries, per box	4.50
Apricots, per box	1.75

Calgary, August 21.—The following are jobbers' prices to retailers to date:

Grapes, 24 lb. per crate	\$2.75
California Plums and Prunes ..	\$2.10 to 2.25
Washington Plums & Prunes, per crate	1.75
Washington Apples, No. 1, per box..	2.75
British Columbia Apples	2.25
Crab Apples, in pear-boxes	2.25
Crab Apples, in apple-boxes	2.50
California Cantaloupes, 45s per crate..	5.25
California Pears, Bartletts	3.25
California Peaches, Carmans and Crawford	\$1.35 to 1.50
Gooseberries, 24, 4-5	3.75
B. C. Blackberries, 2-5	2.75
B. C. Cherries, Morello, 4-5	4.50
B. C. Cherries, Olivets, 4-5.....	4.50

B. C. Blueberries, per lb. ....	.15
Rhubarb, per crate	1.25
California Tomatoes	1.50
B. C. Tomatoes, 4 bkts.	2.25
Cucumbers, per doz. ....	.75c to 1.25

Correspondent, Regina, August 18, reports as follows: "Weather fine; business good; Washington fruit in good supply and demand. Selling peaches \$1.50 per case; plums, \$1.75; pears, \$4; Ontario plums in baskets, 60c; apples in baskets, 50c; tomatoes in baskets, 50c. The trade are looking for car rates on fruit."

Correspondent, Saskatoon, August 19, reports as follows: "Small fruits coming in more freely. Peaches selling \$1.50 per box; plums, \$1.60 to \$2; pears, \$3.75 to \$4; southern apples in barrels, \$5; crab apples, \$3 to \$3.75; box apples, \$2.75. Supplies will be liberal henceforth."

The following fruit from British Columbia points was received at Calgary for week ending August 12:

Raspberries	322	cases
Blackberries	234	"
Gooseberries	10	"
Currants	21	"
Cherries	20	"

Total 607 cases

Jobbers everywhere are not anticipating low prices on any variety of deciduous fruits this season, fruit crop reports not being so favorable as season advances from various points. British Columbia growers and shippers should hold firm to good prices, from present indications. Potatoes still show downward tendency. Local-grown are now being offered at reduced prices. This season has been favorable to their growth here, but frost may injure before they mature, while rot may set in as well from excess of moisture. Next week's report will contain a list of hay dealers at various points, as per request.

POETICAL PROSE

Life is a narrow vale between the cold
And barren peaks of two eternities.
We strive in vain to look beyond the
heights;
We cry aloud; the only answer
Is the only echo of our wailing cry.

From the voiceless lips of the unreplying
dead
There comes no word; but in the night
of death
Hope sees a star, and listening love can
hear
The rustle of a wing.
These myths were born of hopes and
fears and tears
And smiles; and they were touched and
colored
By all there is of joy and grief between
The rosy dawn of birth and death's sad
night.
They clothed even the stars with pas-
sion,
And gave to gods the faults and frailties
Of the sons of men.

ROBERT G. INGERSOLL.

TWENTIETH-CENTURY LAND

Out from the mists of Humanity's
sorrows:
Out where the heralds of Destiny
stand;
Rises the star of a world's Tomorrows
Over the Twentieth-century Land.
Wind-swept of Heaven are the sentinel
mountains;
Sun-kissed the prairies that melt into
space;
Rivers and forest-girt lakes are the foun-
tains
Brimming with pulse-beats for Indus-
try's race.
Soil of a million suns! Seed-time and
reaping
Rouse thee from sleep with a Midas-
tipped wand;
World-weary argonauts westward are
keeping
Tryst in the Twentieth-century Land.
Last of the Earth's virgin hearts to sur-
render;
Queen of an Empire that follows the
sun;
Strong men are wooing thee—loyal and
tender
Millions of patriots phalanxed as one.
Dreams of the Ages in thee find fruition;
Freemen rejoice as thy glories expand;
Beacon-lights burning, hold true to thy
mission!
Canada! Twentieth-century Land!



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